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Products, News & Information Data Centers Can Trust. Since 1979

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COVER FOCUS

Advice From The Experts

We talked with industry experts and other insiders to come up with tips and advice for solving some of a data center's most perplexing problems.

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Tackling Tough Cooling Problems

Experts Weigh In On The Attack Against Steadily Rising Data Center Temperatures

by Christian Perry

• • •

Heat is no laughing matter for data center managers. In fact, cooling is constantly a nagging issue for data centers of every size, particularly as servers continue to pack ever more performance into their thin frames.

"Cooling in the data center is right up there with power for the most overlooked aspects in data centers," says Christine Crandell, executive vice president and chief marketing officer at Egenera (www.egenera.com). "Most seem to not realize that there is a problem until something critical goes down, causing a data center-wide issue. As more and more data centers move to dense racks, virtualization, and SAN, this will become a larger problem."

Controlling Dynamics

A newly built data center boasts the capability to handle most heating issues because its designers are familiar with

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Key Points

- Remember that any change to a data center environment, particularly when high-density equipment is involved, can alter environmental conditions.
- The design of older data centers might not accommodate high-density equipment, but spreading these devices across the data center can help to avoid hot spots.
- Keep on top of your cooling system by scheduling regular meetings to gauge the current capacity and determine whether it's time to add additional units or make other changes.

Setting IT Priorities

Strategies For Success In Uncertain Times

by Sixto Ortiz Jr.

• • •

Fall means cooler weather, baseball playoffs, and the winding-down process for yet another year. But, autumn also means decision makers must begin thinking about their budgetary and strategic priorities for the coming year. This year has been quite a challenging year, so setting up priorities for 2010 and beyond will prove to be especially challenging.

After all, with so much uncertainty surrounding the economy, there is little doubt that IT spending and budgets will at best be an uncertain proposition until the economic picture turns for the better. But even in the worst of times, enterprises must continue to operate, so IT and/or data center managers must continue to move their operations forward. Decision makers must implement careful strategies to ensure success during uncertain times.

Key Points

- Economic uncertainty means decision makers in IT must carefully watch every dollar of expenditures.
- Alignment with the overall goals of the business is key to ensuring long-term strategies proposed by IT and data center managers have a good chance for success.
- Depending on how current massive legislative efforts go, the government and healthcare sectors could experience explosive growth in the years ahead.

Sure Strategies In Uncertain Times

The main challenge facing decision makers during uncertain economic times is the utter lack of clarity. On one side, budgets may be severely impacted when revenues and profits take a tumble; on the other hand, taking an overly cautious approach to strategic investments even as the economic climate improves can lead to missed opportunities.

Decision makers within the IT world at least have one advantage: They are familiar with economic uncertainty. Mike Talon, an

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   - ☐ Less than 10
   - ☐ 10 to 99
   - ☐ 100 to 199
   - ☐ 200 to 499
   - ☐ 500 to 999
   - ☐ 1,000+

2. **How often do you purchase computer hardware/software?**
   - ☐ Weekly
   - ☐ Bi-weekly
   - ☐ Monthly
   - ☐ Quarterly
   - ☐ Annually
   - ☐ No Involvement

3. **What is your annual computer hardware/software purchasing budget?**
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   - ☐ $25,000 to $49,999
   - ☐ $50,000 to $99,999
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Also In This Issue...

TECH & TRENDS

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■ Wouldn't it be nice if software were intuitive and worked the way you expected? If it adapted to your workflow? **User-experience engineering** seeks to fix these problems..... **page 41**

■ If your enterprise needs to **build a new data center**, that's probably good news. But because many companies are conserving funds, your construction budget may be less than ideal ..... **page 42**

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■ DataPreserve makes highly secure **enterprise-class online backup and storage** solutions available to smaller companies ..... **page 28**

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■ After looking at **data deduplication** solutions from several vendors, the University of New Hampshire chose SEPATON's S2100-ES2 Virtual Tape Library and DeltaStor Deduplication Software ..... **page 20**

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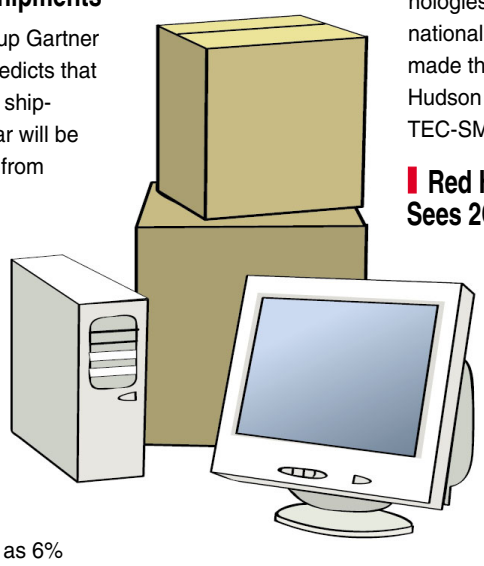
News

Gartner Optimistic About PC Shipments



Research group Gartner says it now predicts that worldwide PC shipments this year will be down just 2% from 2008, to 285 million units shipped compared to 2008's 291 million units. In June, Gartner had anticipated PC shipments would drop as much as 6% this year. Gartner Research Director George Shiffler credits the more optimistic outlook to "substantial momentum" in mobile PC shipments and a slowing decline in desktop PC shipments. Shiffler says Gartner does not expect Windows 7's release on Oct. 22 to significantly influence PC demand at year-end.

United States Has Plans For Technology Innovation

President Barack Obama announced the United States government's plans to develop a strategy to quicken technology and business innovation. As part of the plan, $100 billion of the federal Recovery Act funds will be given to create a national environment that's more conducive to entrepreneurship as well as one that delivers the "tools" for innovation. The plan features an increase in federal funding for basic research and development, development of an "IT ecosystem" supported by widely available Internet access, community innovation, and government support for advance vehicle technologies and other markets of "exceptional national importance." President Obama made the announcement in a speech at Hudson Valley Community College's new TEC-SMART center.

Red Hat Sees 2Q Revenue Rise 12%

Open-source provider Red Hat announced its revenue for the second quarter of fiscal year 2010 rose 12% from a year ago to $183.6 million. Of that total, Red Hat reported that subscription revenue accounted for $156.3 million, a 15% increase from last year. Net income, meanwhile, was up to $28.9 million from $21.1 million last year. In a press release, Red Hat President and CEO Jim Whitehurst said, "We continue to be optimistic about Red Hat's future and believe the company is well positioned when the economic and IT spending environment improves." Whitehurst added that, "In addition to solid second-quarter results, we also marked a new milestone in Red Hat's 10-year history as a public company by our inclusion in July as a component of the S&P 500." Red Hat's operating cash flow reached $62 million in the second quarter vs. $54.3 million a year ago.

Twitter Raises Investment Funds, Valued At $1 Billion

Twitter Chief Executive Evan Williams confirmed that the company "closed a significant round of funding with a group of investment firms." The ultra-popular microblogging service thanked Insight Venture Partners, T. Rowe Price, Institutional Venture Partners, Spark Capital, Benchmark Capital, and Morgan Stanley in a blog post. Williams didn't announce a monetary figure, but *The New York Times* reported that Twitter secured $100 million in funds. Additionally, the newspaper reported that, despite Twitter having yet to produce revenue, the funding helped give the company a value of about $1 billion. The *Times* reported that Twitter previously snagged $55 million in funding and may still have $25 million of that total in the bank.

Report: DoD Doesn't Follow Recommended Disposal Procedures

The military's inspector general found that the Department of Defense may risk exposing personally identifiable information and other sensitive data because it doesn't always follow recommended procedures in preparing computer equipment for disposal or reuse. The inspector general found that several military departments didn't properly delete data or completely account for unclassified equipment before releasing it to other organizations. In 2007 and 2008, the DoD disposed of more than 340,000 pieces of IT equipment, including computers, hard drives, mobile phones, and jump drives.

WATCH THE STOCKS

This information provides a quick glimpse of current and historical stock prices and trends for 14 major companies in the technology market.

Company	Symbol	Year Ago	Sept. 17 $	Oct. 1 $	% change from previous issue
AMD	AMD	$4.53	$5.67	$5.39	▼ 4.94%
CA	CA	$19.37	$22.67	$21.21	▼ 6.44%
Cisco Systems	CSCO	$21.25	$23.39	$23.09	▼ 1.28%
Dell	DELL	$15.25	$16.86	$15.14	▼ 10.2%
Google	GOOG	$386.91	$491.72	$487.20	▼ 0.92%
HP	HPQ	$43	$45.71	$45.96	▼ 0.55%
IBM	IBM	$103.44	$121.88	$117.90	▼ 3.27%
Intel	INTC	$17.31	$19.41	$18.90	▼ 2.63%
McAfee	MFE	$32.16	$42.48	$42.97	▲ 1.15%
Microsoft	MSFT	$26.32	$25.30	$24.88	▼ 1.66%
Oracle	ORCL	$19.48	$21.52	$20.36	▼ 5.39%
Red Hat Software	RHT	$14.65	$25.48	$26.97	▲ 5.85%
Sun Microsystems	JAVA	$6.75	$9.14	$9.04	▼ 1.09%
Symantec	SYMC	$16.95	$16.03	$15.88	▼ 0.94%

NOTE: This information is meant for reference only and should not be used as a basis for buy/sell decisions.

RIM Income Down

BlackBerry maker Research in Motion reported net income for the second quarter of $475.6 million, or 83 cents a share. That's down from the reported $643 million ($1.12 per share) during the first quarter and $495.5 million (86 cents a share) a year ago. RIM credits the drop to the payment of its legal settlement with Visto, which had sued RIM for violating four of its patents regarding the access and synchronization of information over a network. RIM says it shipped about 8.3 million devices and added 3.8 million new BlackBerry subscriber accounts during the second quarter.

News

UNC Notifies Students Of Security Breach

The University of North Carolina at Chapel Hill experienced a server breach in its School of Medicine and has begun notifying about 163,000 women that their Social Security numbers and other personal information may have been compromised when they took part in a research project. Matt Mauro, the chairman of the school's Department of Radiology, says the breach was discovered in July when one of the researchers had trouble logging into the system, and that the initial hacking may have happened up to two years ago, evidenced when researchers found viruses dating back to 2007. UNC has been working with a forensics team to try to determine the extent of the breach and have had the system offline since July.

HP Drops EDS Name

HP will no longer use the EDS brand name. The move comes more than a year after HP acquired the service provider for about $13.9 billion. EDS, an HP Company, will now be known as HP Enterprise Services. HP also announced it will change the name of its Technology Solutions Group to HP Enterprise Business. The group, which HP says accounted for about 47% of the company's revenue during the third quarter, offers enterprise services, servers, storage, and software, focusing on businesses and government agencies. Joe Eazor, senior vice president and general manager of HP Enterprise Services, says the combination of EDS' brand equity, built over the past 47 years, and HP's technology leadership puts HP in position to become the leading IT services provider.

Oracle Fined $10K For IBM-Related Ads

As the months started to drag on in Oracle's proposed takeover of Sun Microsystems, the database giant grew wary of mounting customer defections to Sun's competitors. Oracle ran ads in *The Wall Street Journal* and *The Economist* claiming that its software running on Sun hardware could do transaction processing and database tasks faster than an IBM solution. However, because Oracle didn't back up its claims with verifiable benchmarks, the Transaction Processing Performance Council fined the company $10,000 for violating its fair use policy. The council of industry representatives oversees the objectivity of the sector's performance metrics.

Microsoft Approves "Say On Pay" Plan

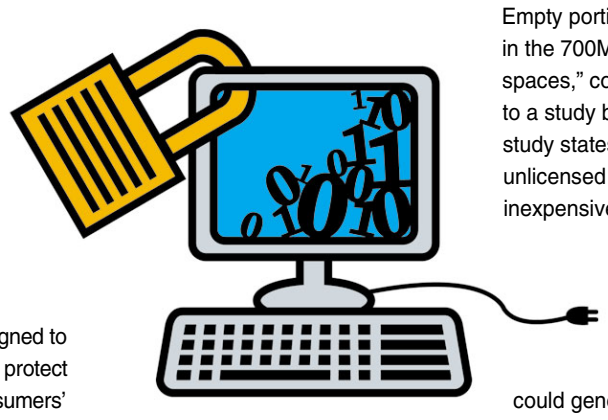
Microsoft has approved a new plan that allows company stockholders the opportunity to offer suggestions on pay for CEO Steve Ballmer and other top executives. The plan, known as "say on pay," would not be binding on the company. The shareholder vote will be taken every three years at Microsoft's annual meeting, with the first vote scheduled for Nov. 19. The decision to seek shareholder input has come as a result of recent public backlash against corporate execs making huge salaries at the same time their companies are experiencing financial difficulty.

Two More Romanian Phishers Extradited

The war against phishing scammers is heating up. The U.S. Department of Justice recently extradited a pair of Romanians, Petru Belbita and Cornel Tonita, on charges of orchestrating phishing scams that robbed victims via fake versions of the Web sites of Citibank, Wells Fargo, eBay, and other institutions. The duo, along with 40 others, were nabbed in FBI sting operations in May 2008. According to court papers, the scammers face more than 30 years in prison if convicted. The first foreign national to be convicted on phishing charges, OvidiuIonut Nicola-Roman, was a fellow Romanian apprehended in the same sting operation; he received a sentence of four years.

Personal Data Security Found Lacking

A new survey from Imperva and Ponemon Institute shows that enterprises need to do a better job of handling their customers' personal information. The survey examined more than 500 U.S. and multinational IT security firms to determine their adherence to the PCI DSS (Payment Card Industry Data Security Standard), which is



designed to help protect consumers' identities from would-be data thieves. The study found that about 55% of those surveyed admit that Social Security numbers, bank account details, and other personal data aren't secured to the same degree as customers' credit card numbers. Just 22% of those surveyed say they are fully compliant with PCI DSS. High costs and a general lack of resources were blamed for the fact that 71% of the respondents don't consider data security a top priority. Despite this, 79% claim to have experienced a data breach. The survey also reports that just 28% of survey respondents with 501 to 1,000 employees comply with the PCI DSS, compared to 70% of the respondents with 75,000 or more employees. Organizations on average spend about 35% of their IT security budgets on PCI compliance, with 55% saying their CEO does not appear to consider PCI DSS compliance a priority and 52% admitting that proactive identity-protecting steps are not being taken. About three out of every four organizations surveyed say they have achieved partial compliance, 28% of respondents report that most of their applications and databases are compliant, and 25% say some apps and databases are compliant.

Microsoft To Discontinue Dynamics Mobile Products

Microsoft says it will discontinue the mobile versions of Dynamics ERP. Mobile access to both Microsoft Dynamics AX and Dynamics NAV will no longer be available after Aug. 31, 2010. In a post to the Microsoft Dynamics Mobile Team blog, the company noted broad availability of partner-developed mobile solutions as the primary reason for discontinuing the products. Microsoft has been sending messages to its Dynamics users alerting them to the change.

FCC Asks For Commentary On Broadband Spectrum

The Federal Communications Commission is seeking comments on the use and allocation of the wireless broadband spectrum. Officials within the wireless industry are requesting that more spectrum be made accessible now that close to 40 million U.S. wireless customers access mobile broadband. AT&T supports the increase with new statistics: The carrier has seen a 5,000% growth in data usage since 2006. The FCC's goals are to learn more about the use of the spectrum and to obtain suggestions about how it should be utilized in the future.

Study: SMEs Are Adopting Open-Source Software

According to a recent survey sponsored by Sun Microsystems, more small and medium-sized enterprises in Europe are using open-source software and MySQL. About 54% of SMEs nationwide use open-source software, and the survey predicts that average usage will grow to about 70% in 2011. The survey states that SMEs are motivated by cost savings, freedom to choose a preferred programming language and operating system, performance, scalability, and ease of use. The survey included 637 SMEs across Europe.

White Spaces Could Be Worth A Fortune

Empty portions of the television spectrum in the 700MHz band, also known as "white spaces," could be worth billions, according to a study by Perspective Associates. The study states that keeping the white spaces unlicensed could lead to increased and inexpensive wireless broadband access in more rural areas with a lower cost of entry. During the next 15 years, improvements to Wi-Fi, potentially from access to the white spaces, could generate between $3.9 billion and $7.3 billion every year, the study says.

Report Details U.S. Smart Grid Standards

The Cyber Security Coordination Task Group, led by the National Institute of Standards and Technology and made up of members from academia, industry, government, and regulatory bodies, released a preliminary report that outlines the standards needed for a U.S. smart grid. The report, "Smart Grid Cyber Security Strategy and Requirements," details issues such as risk management, privacy, and security vulnerabilities of employing the U.S. electrical power grid as a two-way exchange of data and electricity. With the development of a smart grid, consumers would be able to gain more control of their energy use and costs. The draft is open for public comment, with a final draft expected by March 2010.

ICANN Gains Independence From U.S. Government

ICANN and the U.S. Department of Commerce signed an agreement that gives ICANN the power to remain a private, nonprofit organization and to be "independent and not controlled by any one entity." ICANN, the Internet Corporation for Assigned Names and Numbers, is an organization that runs some of the basic systems of the Internet, including top-level domain name system management and IP address space allocation. Though the agreement will end short-term agreements with the U.S. government, the United States still controls the Internet global domain naming system and will hold one seat on the soon-to-be-implemented ICANN advisory panels.

Upcoming IT Events

Are you looking to learn more about data center or IT topics? Network with some of your peers? Consider joining a group of data center professionals. If you have an event you'd like listed, please send an email to feedback@processor.com.

- OCTOBER -

AITP Garden State
Oct. 13
www.aitp.org/organization/chapters/chapterhome.jsp?chapter=21

PASS Wisconsin SQL Server User Group
Oct. 13
Green Bay, Wis.
wisconsin.sqlpass.org

SA IT Service & Microsoft Lunch & Learn
Featuring keynote speaker Laura Ries, author of "War In The Boardroom"
Oct. 13, 11:30 a.m. to 1:30 p.m.
Crowne Plaza Atlanta Ravinia
4355 Ashford Dunwoody Road
Atlanta, Ga.
www.saitservices.com

AFCOM Central Ohio
Oct. 14, 11:30 a.m.
Columbus, Ohio
www.afcomcentralohio.org

AITP Central Idaho
Oct. 14, 11:45 a.m.
Owyhee Plaza Hotel
1109 Main St.
Boise, Idaho
www.boisestate.edu/dpma/dpmaci/centida.html

ICCA Kansas City
Oct. 14, 7:30 a.m.
Perkins Restaurant
11200 W. 87th St.
Overland Park, Kan.
www.icca-kc.org

ISSA New Jersey
Oct. 14
nj.issa.org

AITP Atlanta
Oct. 15, 5:30 p.m.
Crowne Plaza Atlanta Perimeter NW
6345 Powers Ferry Road NW
Atlanta, Ga.
www.aitpatlanta.org/live

AITP Greater Boston
Oct. 15
www.bostonaitp.org

AITP Omaha
Oct. 15, 5:30 p.m.
Seraph Corp.
Omaha, Neb.
www.aitpomaha.org

AITP Tarheel
Oct. 15, 6 p.m.
Foothill Brewery
638 W. 4th St.
Winston-Salem, N.C.
www.aitp.org

Boston Society for Information Management
Oct. 15
www.simnet.org/Chapters/Northeast/Boston/tabid/78/Default.aspx

Tech Execs Network | CIO Panel Forum
Oct. 15, 8 a.m.
UHY Advisors
Houston, Texas
www.techexecs.net/houston.htm

ISSA Upstate SC
Oct. 16, 11 a.m.
NuVox
301 N. Main St., Suite 5000
Greenville, S.C.
www.upstate-issa.org/index.htm

AITP Pittsburgh
Oct. 19, 6 p.m.
Sokol Club-Southside
2912 E. Carson St.
Pittsburgh, Pa.
www.aitp-pgh.org

AITP Long Island
Oct. 20
www.aitp-li.org

For more Upcoming IT Events, see page 5.

Tackling Tough Cooling Problems

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the initial amount of equipment going in. However, as needs grow, an influx of equipment can quickly throw those original capabilities out of whack. Crandell notes that CIOs are constantly asked to add systems for the latest application or to remove or replace other systems, which in turn changes the data center's cooling dynamics. Further, it's not just major infrastructure changes that can impact cooling, but even smaller incidents.

"During some rack maintenance, a contractor dropped a small screwdriver down the side of a rack of one of our customers," relates Harry Schechter, founder and CEO of Temperature@lert (www.temperaturealert.com). "The screwdriver lodged itself in a fan and caused a massive hot spot in the rack. Only when systems started going offline over the weekend did they know something was up."

Crandell recommends using efficient racks with good airflow dynamics, as these will help to overcome the airflow issues that can emerge between all of the processing and storage units that may occupy each rack. For high-density rack configurations, she notes that additional cooling, such as liquid cooling or independent cooling fans for each rack, might be required. Depending on the data center's architecture, this can be done on a one-to-one basis or throughout the room.

Spread The Heat

High-density servers can be a boon to data centers seeking to extract the most performance from their spaces, but they're a primary source of skyrocketing temperatures. Tom Nats, managing partner of Red Rocks Data Center (www.redrocksdatacenter.com) in Morrison, Colo., explains that blade integration can demand quick action to battle the huge addition of heat.

"The first time we took delivery of a high-demand blade chassis at Red Rocks Data Center, we were surprised at the amount of heat it generated and the demands on our cooling system," Nats says. "We interspersed them throughout our data center to increase the amount of cooler air that we were able to wrap around them. Most importantly, we added an air-side economizer that draws cool mountain air into the data center during 80% of the year, alleviating these cooling issues in the most environmentally friendly manner."

Data centers designed just five years ago often didn't account for the eventual arrival of blade servers and still are unable to adequately accommodate them in terms of cooling, Nats says. However, smaller data centers have a significant advantage in this aspect, as they can more easily redesign and implement new cooling technologies. Nats also recommends simply spreading blades to different parts of the data center.

"The first impulse is to throw more energy at the problem, increasing the current cooling capabilities, which usually translates into unreasonable costs, which in turn get passed along to customers. It is not a very green solution, and it is one that Red Rocks has avoided," he says.

Preparation Is Paramount

Schechter recommends staying one step ahead of a failure by scheduling regular environmental management meetings and evaluating the current load on the cooling system. When you exceed the threshold in which losing one cooling system won't negatively impact the overall data center temperature, he says, add an extra cooling unit to your system. Such preparation can also prevent minor problems from ballooning into major issues.

"An improperly installed electrical unit once caused five massive air handlers to all be taken offline. Three of them came right back online, but the other two didn't. It turns out that the perfect storm of failures occurred, with two other minor issues preventing the additional units from coming back online. Had the documentation and maintenance plan been up-to-date—and immediately tested—we would have had no issue, because the $15 part would have already been replaced," Schechter says.

Keep An Eye On Heat

According to Geoff Lyon, CEO of CoolIT Systems (www.coolitsystems.com), managing the thermal conditions of a space that's in constant flux—such as a data center—is highly difficult. The load or power consumption can be unpredictable based on usage or computing demand, which often forces data center managers to build in a huge thermal buffer.

Such buffers can provide serious cooling but can also waste energy. A better solution, Lyon says, is real-time dynamic monitoring and cooling control. "Having a sensor-based system that can actively monitor the cooling requirements of a server environment is both the safest and most efficient way to thermally protect the environment," Lyon says.

Schechter adds that although overall ambient air temperature can deliver an adequate macroscopic view of the data centers, managers should also consider deploying high-performance, low-cost temperature monitors in tight spaces throughout the data center. These monitors can deliver data on more of a microscopic level that lets managers quickly identify hot spots and correct them before equipment fails.

Best Tip: Schedule Regular Checkups

The sensitive ecosystem of the data center can be a headache breeding ground for managers trying to keep heat issues under control. But Christine Crandell, executive vice president and chief marketing officer at Egenera (www.egenera.com), says it pays to be proactive and understand that any changes in the data center can affect the cooling of anything, from a single server to the entire environment.

She recommends implementing regular checks of the cooling infrastructure, including checking for hot spots using temperature gauges, ensuring dense racks are sufficiently cooled, and visually checking the inlets and outlets for proper positions. Crandell also suggests getting familiar with concepts such as infrastructure orchestration and workload management to eliminate redundant hardware while still providing high availability and disaster recovery.

Setting IT Priorities

Continued from Page 1

enterprise system engineer at DoubleTake Software (www.doubletake.com), suggests that for the IT professional, these times are only slightly more uncertain than in the past. According to Talon, IT has always had to deal with the fact that it's universally a cost center for the modern organization. Even though budgets will be leaner this year, says Talon, the overall strategy of doing more with less is still as valid as ever.

Johanna Rothman, president of the Rothman Consulting Group (www.jrothman.com) and author of "Manage Your Project Portfolio: Increase Your Capacity and Finish More Projects," says decision makers must ensure they avoid committing to large expenditures until there is some "proof"—such as a prototype—that a solution works. If spending money can't be avoided, Rothman recommends figuring out a way for the vendor to share some of the risk before substantial money and time are committed to a project.

Thinking Long-Term

Dealing with short- to medium-term priorities is no easy proposition when times are uncertain, and establishing long-term priorities in a treacherous economic climate is even more difficult to accomplish. But, enterprises have an obligation to look ahead and ensure future strategies work well with whatever business conditions lie ahead.

Al Zoldos, vice president of sales for Staples Technology Solutions (www.staplestechnologysolutions.com), says although it can be tempting to ax multiyear projects during uncertain economic times, it is important to consider the long-term health of the organization and to look at long- and short-term projects anew. Managers should discuss who will benefit from each project, what the benefits will be, and how those benefits affect the bottom line. Also, he warns, decision makers should review procurement decisions carefully to ensure no one is trading long-term risk for immediate, short-term savings via procurement decisions. A seemingly well-intentioned decision could mean trouble in the long run.

Decision makers in IT also need to ensure that there is good communication with top management. Bob Venero, CEO of Future Tech Enterprise (www.ftei.com) says IT managers need to look at their five-year plan from a data center perspective and ask themselves if that plan is in harmony with the strategic goals of the organization. Open communication with senior management, says Venero, is more important today than ever.

Cameron Chehreh, CTO and senior vice president of applications outsourcing and staffing solutions for OAO Technology Solutions (www.oaot.com), also recommends that IT decision makers ensure their strategies align with the overall business. In order to accomplish this, he adds, decision makers should implement a governance model that ensures everyone is on same page.

Strategies For Health, Government & Education

There is no doubt that data centers in enterprises operating within the health, government, and education sectors will require decision makers to implement unique strategies in the face of a changing landscape for these sectors of the economy. For example, the current push to reform health care may provide this particular economic sector with some unique opportunities in the years ahead. Government growth is all but certain in the current federal climate, and technology continues to present educators with both opportunities and challenges for improving education.

Chehreh says the security and regulatory compliance requirements specific to the health, education, and government sectors provide a distinct difference for those markets. So, he adds, IT or data center managers in these sectors must not only keep systems compliant with current legislation, but also predict future legislative impacts and plan accordingly.

> Even in the worst of times, enterprises must continue to operate, so IT and/or data center managers must continue to move their operations forward.

Gary Weiner, a senior manager at outsourcing firm ACS (www.acs-inc.com) who is currently working as an interim CIO at a client hospital, says the federal stimulus will provide funding for physicians and hospitals to implement EMR (electronic medical records) for the sharing of data to enhance medical outcomes, reduce redundant testing, and expedite the sharing of results. Data center managers, adds Weiner, need to begin planning for highly redundant and highly available data centers in order to meet the 24/7/365 requirement to provide access to this information.

Of course, the legislative winds can change with new electoral mandates. This reduced predictability—as compared to the commercial sector—due to pending legislation means sectors such as government and health care may be facing more turbulent times, says Kris Domich, national principal of data center solutions for Dimension Data (www.dimensiondata.com). Depending on the outcome of the healthcare debate and other political issues, he adds, there could be explosive growth in the need to provide IT capacity for added levels of public services, with a potential user base in excess of 80 million to 100 million or more.

"Short-term IT plans," says Domich, "should continue to focus on optimization and increased efficiencies, but must also consider the possibility of acute medium- and long-term growth, so focusing on modular data center plans is critical." And, he adds, in some cases, meeting short-term explosive growth may not be doable organically, so decision makers should consider retail cloud services in order to meet large-scale growth in an acceptable time frame.

COVER FOCUS

Work With What You Have

Expert Tips On Making The Most Of A Variety Of Existing Equipment

by Holly Dolezalek

• • •

How do you run when your foot is stuck in a bear trap? Data center managers everywhere are asking themselves this question—although not literally, of course. They're actually asking themselves, "How can I deliver high-quality service to my end users when I have no budget to buy the modern, efficient equipment I need?"

At companies both large and small, IT managers are stuck making do with what they have instead of buying what they need (or want) until happy budgetary days are here again. Luckily, according to the experts, there are more options than you might think.

Servers

A good starting point is to assess every piece of equipment you have and what it's doing. This is how you can identify any ghost or zombie servers that are taking up space and energy while doing absolutely nothing. "In most large companies, there's a fair amount of idle technology, and that idle technology is not only hurting the ROI of your hardware portfolio, it's also increasing your impact in energy costs and infrastructure costs," says Bob Houghton, president of Redemtech (www.redemtech.com).

It's also an opportunity to discover whether some servers could be consolidated. "Let's say you have six servers that are all providing email services," says John Bennett, worldwide lead for HP's data center transformation solutions. "You may be able to combine those six servers into two or three, and that kind of consolidation can result in savings that come out of your budget cuts or even become a source of funding that can go toward other tasks."

You can also reuse those servers in another area that needs more capacity without having to order new product. "There are financial returns from intelligent and strategic lengthening of life cycles, and surplus product in one area can be employed in another with no increase in budget," Houghton says.

Storage

The same logic applies to storage devices. Once you know exactly what your storage assets are and have a map of what they're doing, you can see what storage is dedicated to particular servers. From here, you can see what assets might be used to support a storage-area network or virtualized storage. Once your data is in virtualized storage, you can redeploy the assets that once provided your dedicated storage.

"This concentrates your storage administrators on fewer resources and assets and gives you more robustness and flexibility in your storage environment," Bennett says. "Once that's the case, you might be able to sell those storage devices or dispose of them on third-party markets, which frees up cash and assets."

Applications

Next, inventory your applications. This will be helpful with virtualization, but it's even more helpful with eliminating redundancies. "It's not uncommon to discover, especially when a data center is supporting multiple business units or lines of business, that there are similar applications that are doing similar tasks," Bennett says. "Maybe you bought one application from a vendor, wrote the second one, and bought the third from a different vendor at different times, and maybe the one you wrote could be replaced with one of the others. Or there may be a third-party application that wasn't available when you wrote it."

You may be able to save money and resources by making one application work where three did previously, or you may be able to replace the staff costs of maintaining the in-house application with more inexpensive licensing costs on a third-party application.

Virtualization

By virtualizing applications, you can get multiple virtual machines to share the processor and memory of a single server. "This gives you a lot more flexibility to extend the value of your servers, because you can even have applications with different operating systems on the same server," says Lynda Stadtmueller, senior research analyst for the Stratecast division of Frost & Sullivan.

Bennett warns against thinking of virtualization as free money, though. There may be licensing changes if you move an application to a virtualized environment. "Everything requires management and staff costs," he says. "You have to do virtualization judiciously to avoid tripping over new expenses."

Key Points

- When budgets are tight, find out everything you can about what equipment you have and what's running on it.
- Unused or underused equipment can be a source of savings.
- Consolidate, virtualize, and outsource wherever you can to create extra capacity in your data center.

WAN Optimization Or Traffic Prioritization

For years, bandwidth costs dropped so fast that every application problem was solved by adding more bandwidth, Stadtmueller says. But when your budget doesn't allow for more bandwidth, you have other options. WAN optimization or traffic prioritization can allow you to get more utilization out of the bandwidth you have. "You have to establish protocols so that employee YouTube surfing takes a backseat to your Oracle traffic," she says. "WAN optimization tools and services can analyze your traffic and assign appropriate levels of priority based on the application in question. You end up satisfying more of your end users by giving more thought to how applications will run over your network."

In these ultra-competitive times, no data center manager can afford to be the one saying, "I can't get it done." The more you know about your overall IT picture, the better positioned you are to make the most of what you have until you have more to work with.

Best Tip For Beginners: Consider Outsourcing

If you're tasked with supporting a new application but given no budget for additional servers and equipment, outsourcing may be your best option. Not only does it tap into the operating budget instead of the capital expense budget, it's a way to cope with reduced staffing levels if that has been part of budget cuts. "There's almost no way to construct a business case that doesn't make outsourcing more attractive financially," says Lynda Stadtmueller, senior research analyst for the Stratecast division of Frost & Sullivan. "The physical facility is likely to be built to a higher level of security and redundancy than most small to midsized businesses can afford, you're not paying the cost of equipment or for labor or installation, and you don't have to pay for the heating and cooling expenses or any build-out."

This is especially true of those outsourced arrangements that offer a dedicated hosting environment for each client. But Stadtmueller warns of the added risks in cloud arrangements, where clients share server resources. "There are more savings but also more risk," she says.

Upcoming IT Events

For more Upcoming IT Events, see page 3.

AFCOM Michigan Chapter
Oct. 20
Grand Rapids, Mich.
www.afcommi.org

• • • • •

AITP Southwest Missouri
Oct. 20
Springfield, Mo.
aitpspringfield.org

• • • • •

ISSA St. Louis Chapter
Oct. 20
St. Louis, Mo.
stl.issa.org

• • • • •

Oklahoma City AITP Chapter
Oct. 20
Oklahoma City, Okla.
www.aitp.org/organization/chapters/chapterhome.jsp?chapter=40

• • • • •

AITP Northeastern Wisconsin Chapter
Oct. 21, 4:15 p.m.
Holiday Inn Select
150 S. Nicolet Road
Appleton, Wis.
new.aitp.org

• • • • •

ISSA Oklahoma City
Oct. 21
Spaghetti Warehouse
101 E. Sheridan Ave.
Oklahoma City, Okla.
www.issa-okc.org

• • • • •

ISSA Des Moines
Oct. 26, 11:30 a.m.
1401 50th St., Suite 200
West Des Moines, Iowa

• • • • •

AITP Akron
Oct. 27
www.akron-aitp.org

• • • • •

ISSA Baltimore
Oct. 28, 4:30 p.m.
Sparta Inc.
7110 Samuel Morse Drive, Suite 200
Columbia, Md.
www.issa-balt.org

• • • • •

Greater Kansas City AFCOM
Oct. 29
Cerner Corp.
3200 N. Rockcreek Parkway
Kansas City, Mo.
www.greaterkc-afcom.com

• • • • •

Information Security Summit
Oct. 29-30
Corporate College East
4400 Richmond Road
Warrensville Heights, Ohio
www.informationsecuritysummit.org

• • • • •

Tech Execs Network | CIO Panel Forum
Oct. 29, 9:30 a.m.
Civica Office Commons
Bellevue, Wash.
www.techexecs.net/seattle.htm

• • • • •

ISSA Northeast Ohio
Oct. 31
Security Summit
neoissa.org

- NOVEMBER -

ISSA New England
Nov. 5
www.issa-ne.org

• • • • •

AFCOM St. Louis "Gateway" Chapter
Nov. 10
Schneider Electric Technology Center
807 Corporate Centre Drive
O'Fallon, Mo.
www.afcom.com/afcomnew/stlouis.html

- DECEMBER -

Gartner 28th Annual Data Center Conference 2009
Dec. 1-4
Las Vegas, Nev.
gartner.com/us/datacenter
For more than 27 years, the Gartner Data Center Conference has provided data center professionals real-world perspectives, tactics, and strategies to keep their operations running at peak performance. Our seven-track agenda drills down on servers and storage, TCO and IT operations excellence, aging infrastructures and the 21st Century data center, next-stage virtualization, consolidation, workload management, procurement, and major platforms.

Solving Power-Related Problems In The Enterprise

Expert Advice On How To Keep Your Data Center Power Grid Humming

by Chris A. MacKinnon

ASK ANY EXPERT, and you'll quickly find out just how critical it is to regulate, distribute, and maintain the optimal power load in the enterprise. Here is a look at some of the best power-related tips and tidbits the experts have to offer.

Eliminate & Regulate

Matthew Cheap, a product manager at Eaton (www.eaton.com), says eliminating wasted power is necessary and can save you money. "Managers today are trying to get the most for every dollar spent on utilities," he says. "Energy that is used for anything other than revenue-generating equipment is seen as waste, and the last place they want to spend that money is on cooling or power protection. Today's UPSes are becoming more efficient and are increasingly reducing equipment loss."

Cheap says new technologies are available that monitor incoming power and switch between normal and high-efficiency modes to further reduce waste losses. He says reducing the waste in the UPS also reduces the heat output of the UPS and therefore lowers the requirement on the cooling system, which saves additional costs.

Michael Petrino, vice president of PTS Data Center Solutions (www.ptsdcs.com), says your UPS can also play a key role in voltage regulation. He says you know you have voltage issues when a UPS generates an error such as "bypass not available" or "bypass out of tolerance."

"This is a typical problem during the summer on very hot days when the utility is struggling to meet the demand on the grid due to the increased usage of air-conditioning systems," Petrino says. "As the grid becomes stressed, you see sags and voltage drops, which can be very stressful as you grow concerned about the UPS no longer accepting utility and going to battery, or even worse, the generator does not kick in."

Petrino says this is a real issue, especially when UPS tolerances are tighter or narrower than those of generators. He says a UPS will most often accept a voltage range of +/-10%, while a generator ATS will accept a typical range of +/-15%. "The most common three-phase voltage in the U.S. is 480V from the utility, but in some areas, the utility company will provide 460V," he says. "If the default setting on your UPS and ATS is 480V, you're already in a 4% under-voltage situation under normal operation. To remedy this, work with an engineer who understands transformers and generators well."

Protect & Size Accordingly

According to Cheap, the cost to commercial and industrial enterprises due to power interruptions is more than $75 billion, with 67% of the cost coming from momentary interruptions of less than five minutes. "Downtime and interruption can cause a loss of data, failed financial transactions, and customer dissatisfaction," he says. "Industry experts have been quoted saying that electricity supply can cause 15 times more problems than viruses, and in today's digital world, these problems cost

Key Points

- Look for ways to reduce wasted power, which lowers heat output and therefore lowers cooling requirements, ultimately resulting in lower costs.
- Start with less expensive, lower-capacity units that allow you to scale up according to your needs without requiring additional hefty investments.
- Keep a close eye on your power systems with devices and software that allow for remote monitoring and control.

Protecting The Network

Pros Offer Tips On How To Shore Up Your Network Defenses Against Vulnerabilities

by William Van Winkle

• • •

HOUSES GET LOCKS. High-rises get security guards. It only makes sense that data centers should employ all feasible and prudent means possible to keep their contents safe from prying eyes. The ins and outs of enterprise security could fill volumes, but in speaking with industry experts, a handful of tips emerged as being particularly valuable for—and often overlooked by—today's IT managers.

Less Is More

Good IT managers are always searching for ways to optimize their systems in order to improve performance and efficiency. Fortunately, the market is full of tools to enable this. Unfortunately, they don't always work as planned. Production servers are not experimental lab rats. They shouldn't be the subjects of demonstration or test software—experiments belong on a test bench, not in production.

Similarly, just as untried and unnecessary applications can damage security, so can unnecessary system services. Excess operating system services can act like windows in a building—they look pretty, but they're also another point of entry for malicious outsiders. Disable such services and, in general, reduce your "attack surface area" as much as possible. This also means restricting what users can do with the systems.

"Users or the accounts associated with applications should be limited to access only what they need and nothing more," says Andrew Plato, president of Anitian Enterprise Security (www.anitian.com). "Avoid discretionary access, both on servers and on the network. Firewalls should be set up and restrict traffic to only what is absolutely necessary. Where possible, require authentication for browsing the Internet. This can stop automated bots and spyware from leaking out of your environment."

Seal The Cracks

Leaks, the little cracks between major pieces of system infrastructure, are much of what insecurity thrives on. In guarding against network vulnerabilities, one of the top priorities should be to identify and seal as many of these leaks as possible.

"Intruders look for holes," says Rob Enderle, principal analyst at Enderle Group. "The most common are the gaps between physical and electronic security tools. If both the physical and the electronic methods have to agree, then simple intrusions (use of an employee password or ID card) become vastly more difficult. Come up-to-speed on TCG's IF-MAP and use it, or something similar, to close this gap."

The Trusted Computing Group's (www.trustedcomputinggroup.org) IF-MAP protocol specifies a metadata database about all users on the organization's network. Applications and systems can coordinate with this database in order to unify security efforts. This way, an intruder can't exploit differences in user identity and credential information across multiple platforms or systems.

Prevention Pays

A major component of a solid vulnerability protection plan should be education. A surprising number of IT professionals fail to keep up on their security training and awareness, despite the fact that threats multiply and evolve on a daily basis. Blake McConnell, senior director of product management for SME security solutions at Symantec (www.symantec.com), notes that his company and many others publish reports that help define the threat landscape

Key Points

- Reduce the attack surface of systems by restricting software, services, and user access on production equipment and implementing intrusion prevention systems to seal the network borders.
- Intruders may be able to use the cracks between different systems in an organization to their advantage. Investigate efforts such as IF-MAP to plug these holes.
- Educate users on proper security practices, enforce policies, and then help them with automated systems.

Best Tip For Beginners: Keep It Simple

People have a tendency to want to impress superiors when they're new on the job, especially when fairly fresh within a given field. Why build a brownstone when you could make a mansion? For starters, there's a lot more that can go wrong in larger efforts, and it's easy to lose sight of what an organization actually needs and should employ in a particular environment. Superiors will be impressed more by a security solution that's cost-effective and dependable rather than elaborate and supposedly all-encompassing.

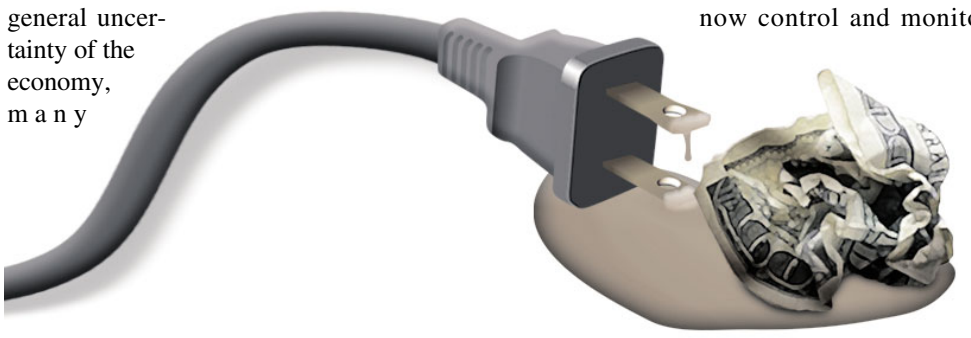
"Keep it simple," advises Rob Enderle, principal analyst at Enderle Group. "The more complex the solution, the more easily it can be compromised. If you can't understand it, chances are it actually won't work very well in your environment."

businesses time and money. Simple power protection from UPSes can alleviate the power interruptions, as well as protect sensitive equipment from the small power anomalies that cause damage every day." Cheap adds that by protecting equipment, enterprises can extend the life of their hardware and increase the return on their investments by reducing capital costs.

Another challenge that data center managers face is sizing for unpredictable data center growth. According to Petrino, this is where a consultant can be helpful to weigh the balance of options between installing UPS equipment and electrical infrastructure. "For projects that are under 500kW, it is possible to install modular UPS solutions or UPS systems that are easily paralleled to increase capacity," he says. "The key is having correctly sized electrical infrastructure in place to allow for future upgrades." Petrino says for larger UPS systems (above 100kW), it may be possible to obtain a field upgrade to increase the system capacity.

Minimize Cost

In Cheap's opinion, it is possible to minimize upfront capital costs while feeling safe about the flexibility to scale business for the future. He says with virtualization, cloud computing, and the general uncertainty of the economy, many managers are struggling with minimizing capital costs while ensuring they are protected. And this applies to both the IT equipment and the equipment required to protect it. "Today's UPSes provide multiple options of scalability to reduce the initial investment," he says. "Managers have the option to purchase less expensive, lower-capacity units and upgrade through firmware at a later date with no additional hardware required."



There are also several units that provide frames or paralleling structures that allow additional power capacity to be added at a later date to scale the protection levels, Cheap says. "In the event that the power requirement decreases, many of these units will allow you to use the idle capacity as redundancy. This provides flexibility for both growth and reduction in power and reduces the initial capital expenditure."

Reduce Facility Expenditures

Although the UPS is integral in the data center power equation, Cheap says today's technology extends beyond the UPS. "One of the major focuses is on the distribution and manageability of power," he says. "With the technology advancements in ePDU (enclosure power distribution units), facilities and IT managers can now control and monitor individual loads and outlets on these 'smart' power strips. This can provide the ability to trend server usage over time to understand where and when the majority of the power consumption is taking place." He says this knowledge can lead to capacity planning and level loading of IT equipment to maximize performance.

In addition to the hardware, Cheap says advances in software allow remote monitoring and control. "Managers can cycle off outlets when equipment is idle or program loads to be idle or shut down during specific times of the day to save on facility costs. All of this can help reduce the major expenditures that companies see for their facilities." P

Best Tip For Beginners: Keep An Eye On UPS Batteries

According to Michael Petrino, vice president of PTS Data Center Solutions (www.ptsdcs.com), UPS batteries can be one of the biggest challenges for SMEs because most issues are not realized until it is too late. Often, battery banks only support a few minutes of runtime compared to the expected runtime of the system.

Petrino says regular battery maintenance and quarterly preventive maintenance is the key to healthy batteries. Using advanced battery monitoring systems with alarm notifications will come in handy. Isolating and replacing bad cells will extend the life of the battery string as well as delay the need to incur the costly expense of the entire battery string replacement.

for small and medium-sized enterprises. This is a great way to stay informed about the current threat landscape and understand what your organization is up against.

Another form of threat prevention lies with hardware appliances, particularly IPS (intrusion prevention system) appliances. These devices are a more aggressive form of traditional intrusion detection systems and provide deep inspection of network traffic and system behavior for malicious activity.

"A good IPS can provide a valuable layer of defense that firewalls and antivirus software cannot," says Anitian's Plato. "Moreover, an IPS can alert you to when attacks are taking place, letting you know if your systems are or have already been compromised. IPSes can also provide a very valuable protection window between when a new exploit hits the Internet and the manufacturer provides a patch or service pack update. While patching systems is important, organizations should never rely exclusively on patches to protect systems, since patches are often released after an exploit has been in use."

Social Services

The reality is that most organizations now employ strong enough systems security to make hacking a cumbersome, difficult task for even seasoned hackers. The easiest attack vector is now people—the everyday users who can unwittingly provide valuable access information to intruders. Why go through the trouble of hacking a password when it's easier to have a user voluntarily give it away? The best way to guard against "social hacking" is with training and participation.

"Users remain the biggest exposure to any security environment," says Enderle. "If they aren't made part of the solution, they will be the major part of the problem. Users should be trained, and training should be enforced with regard to both physical and electronic security policies."

Of course, no amount of training can ever wholly eliminate human error and gullibility. This is why Symantec's McConnell urges companies not only to develop and enforce IT policies but also to automate their compliance processes. By prioritizing risks and defining policies that span across every location, companies can enforce policies through built-in automation and workflow and not only identify threats but remediate incidents as they occur or anticipate them before they happen.

"In addition, there are a number of routine physical security tactics employees can use to help strengthen a company's security defenses," notes McConnell. "These include using the screen-locking feature when away from the computer, shutting the computer off at the end of the day, locking laptops with a cable, not leaving passwords written down, and being mindful of physical security of PDAs and handheld devices, which are a popular target of thieves. Also be sure to implement strong passwords and change them every 45 to 60 days to make it more difficult for intruders to access your data. Finally, make sure employees enable the security settings on Web browsers and disable file sharing." P

News

Are Users Finally Moving To Vista?

According to figures from Net Applications, usage of Windows XP dropped just more than 1% in the month of August, while Vista usage climbed by almost the same amount. Perhaps more notably, Windows 7 usage increased 0.03% in the same month, which brings its current total usage to 1.18%. According to Net Applications, the percentage drop for XP usage appears to coincide with the increase for Vista and, to a much smaller extent, Windows 7.

At initial glance, it appears that users are moving to Vista, but Vincent Vizzaccaro, executive vice president of marketing for Net Applications, is quick to point out that, although this seems likely, it's not a certainty. "We're measuring usage percentage, not numbers of people that own or are running XP. It could simply be that there's a growth in other areas that's making Windows XP go down in usage percentage as opposed to people necessarily walking away from it and upgrading to something else," he says.

To compile its figures, Net Applications uses a sample size of about 40,000 Web sites across the world, which gives it metrics concerning usage for tools such as search engines, browsers, and operating systems.

Steady Vista Growth

Vizzaccaro notes that Vista has seen a steady growth path over the past year, with 13.59% of the total market in October 2008 to its current 18.8%. An increase in Vista usage isn't unexpected, but the about 1% spike is noteworthy. It's particularly odd considering that Windows 7, the operating system that will ostensibly replace both Vista and XP, will be released on Oct. 22 and has been gaining ground in use despite being in prerelease for just a few months.

Does this mean the adoption of Windows 7 may be pushed back? Vizzaccaro says that isn't necessarily true and that a back-to-school rush may have something to do with the numbers. "People are realizing that they need to buy new computers for their college kids and some of their high school kids, and Windows 7 isn't available."

New Windows computers come loaded with Windows Vista, not XP or Windows 7, so new computer purchases will by default boost the usage percentage of Vista, at least for now. Once Windows 7 is released, Vista users will be able to upgrade.

According to Vizzaccaro, "There is a massive population that is waiting to upgrade, and I think they're waiting for Windows 7 to come out. Small to medium-sized companies, and even large companies, don't want to support Vista and then support Windows 7, as well. I think they are skipping Windows Vista and are moving right to Windows 7."

by Seth Colaner

PRODUCT RELEASES

CLIENTS

Accellion SMTP Satellite

Accellion announced its SMTP Satellite, which helps companies make transferring documents from multifunction printers/scanners/copiers more secure. The SMTP Satellite works in conjunction with Accellion's Managed File Transfer appliance to extend file tracking, reporting, and encryption of files. The SMTP Satellite improves email performance and reduces email storage requirements while also preventing data leaks.

Glacier Computer Ridgeline T400

Glacier Computer announced the Ridgeline T400, its semirugged tablet computer for warehouse, freight, manufacturing, and field service markets. The Ridgeline T400 is 10.4 inches in size and features a touchscreen, a 1.6GHz Atom processor, and up to 2GB of DRAM. The T400 also features a built-in camera and may be equipped with optional add-on modules such as RFID, a magnetic stripe reader, GPS, or bar code scanner.

IBM Cognos Express, IBM Storage Optimization & Integration Services & More

IBM announced many new services, software offerings, and systems that are designed to help midsized enterprises gain actionable insight, increase productivity, and improve collaboration. Among the releases is business intelligence software Cognos Express, which is designed to help SMEs improve competitiveness. Other new products include IBM Storage Optimization & Integration Services and IBM System Storage DS5020 Express. Also, IBM Mashup Center, Lotus Live Engage, and SurePOS 500 Express have been updated.

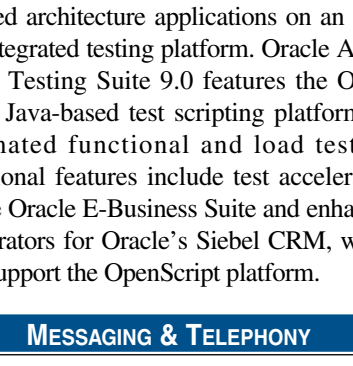
Kensington Pro Fit Collection

Kensington released 12 industrial-strength products under the Pro Fit Collection that the company says are aimed at enhancing enterprise-level business standards of workplace connectivity, productivity, and efficiency. The collection includes a wireless mouse,

two wired mice, a washable keyboard, and a wireless desktop set. The line of products also includes two universal docking stations, a multidisplay adapter, multifunction wireless presenter, ambidextrous trackball, and two ergonomic keyboard trays. The devices are Windows- and Mac-compatible and are designed to withstand drops and spills. The products range from $19.99 to $149.99.

Lenovo ThinkPad X200 Tablet PC & ThinkPad T400s Laptop

Lenovo released the ThinkPad X200 Tablet PC and ThinkPad T400s laptop complete with multitouch screens and SimpleTap software. Additionally, the company is making a super-bright optional screen available with the ThinkPad X200 that Lenovo says provides new defense against the sun when in use outdoors. Lenovo says the X200 Tablet is suited for users in ad sales, health, and educational fields. The touchscreen supports two-finger gestures, including pinching and flicking. The ThinkPad T400s is aimed at professionals in engineering and design and supports four-finger gestures on the touchscreen. The X200 Tablet will support Windows 7 and includes an ultra-long battery with up to nine hours of life. Pricing



for the T400s notebook starts at $1,999 with multitouch screen included. The X200 Tablet starts at $1,654 with multitouch screen and $1,704 with the outdoor screen option.

Lenovo, Wyse Technology Mobile Thin Clients

Lenovo partnered with Wyse Technology to distribute mobile thin clients. Combining Lenovo's small laptop architecture and Wyse Technology's Wyse Device Manager, the thin mobile clients support connectivity for Microsoft Windows Terminal Services, Citrix Application Delivery, and VMware VDI.

Oracle Application Testing Suite 9.0

Oracle unveiled the latest version of its Application Testing Suite, which enables users to test Oracle, Web, and service-oriented architecture applications on an open and integrated testing platform. Oracle Application Testing Suite 9.0 features the OpenScript Java-based test scripting platform for automated functional and load testing. Additional features include test accelerators for the Oracle E-Business Suite and enhanced accelerators for Oracle's Siebel CRM, which now support the OpenScript platform.

MESSAGING & TELEPHONY

Agito Networks Agito For BlackBerry

Agito Networks added VoIP over Wi-Fi and Unified Communications to its Agito For BlackBerry platform. With these new features, BlackBerry users can utilize the coverage and monetary savings offered by Agito Networks' RoamAnywhere Mobility Router, which supports a wide range of devices, PBXes, and WLANs and provides both Wi-Fi and cellular network technology. Agito Networks' RoamAnywhere solution offers mid-call features for BlackBerry smartphones, including hold, conferencing, and transfer; a single enterprise number and voicemail; and call retrieve via both Wi-Fi and cellular networks.

Axigen 7.2

Axigen released version 7.2 of its Axigen Mail Server. Version 7.2 features a new WebMail technology designed to improve the overall user experience when accessing Web-based email communication tools. The Ajax-powered WebMail interface provides users with a desktop-like experience and is ideal for the service provider market segment. The Axigen Mail Server has a strong focus on meeting the needs of enterprise customers, either directly or through service providers employing the SaaS model. Axigen runs on several Linux and BSD distributions, Solaris, Windows operating systems, PowerPC, and SPARC architectures.

HP SkyRoom

HP announced SkyRoom, its high-definition videoconferencing software. SkyRoom offers real-time collaboration for up to four people and will be included as a standard feature on select HP business desktop and mobile workstations. The software will also be available as a free trial on many of HP's upcoming premium business PCs and notebooks. SkyRoom also allows individuals to share office documents, streaming video, and interactive 3D applications.

IBM Lotus Connections 2.5

IBM announced Lotus Connections 2.5, a comprehensive social software platform designed to help enterprises collaborate. Features include the ability to microblog, an enhanced Communities experience including appearance and widget customization, a refined thread conversation display, and a statistics feature to indicate the most popular topics. Other features include a Web-based sharing library for easy uploading and sharing of content as well as integrated mobile support for the iPhone and Nokia S60 devices. Lotus Connections 2.5 is designed to integrate with extranet, Internet, and intranet collaboration services provided by IBM and IBM customers.

Nortel Mobile Cost Optimizer, Hot Desking & UC Desktop

Nortel announced three UC (Unified Communications)-based solutions designed to help enterprises tackle the costs associated with business-oriented cell phone use while enabling employees to work from any location and integrate all their desktop applications. The three solutions, Mobile Cost Optimizer, Hot Desking, and UC Desktop, leverage Nortel's ACE (Agile Communication Environment), a software solution designed to allow customers to extend the value of existing investments in applications and infrastructure.

Sonasoft SonaSafe

Sonasoft announced the release of its email archiving solution, SonaSafe. The software addresses issues that small and medium-sized enterprises face, such as email organization, archiving, and compliance. SonaSafe meets regulatory compliance and e-discovery needs by capturing and storing all incoming and outgoing emails in archive databases as an SIS (Single Instance Store). Other features and benefits include the reduction of email storage and management costs and the ability to find and retrieve any email message in seconds.

Zultys Media Gateway Product Family

Zultys added a Media Gateway product family to its portfolio to provide functionality and flexibility for SMEs. The latest configurations are as follows: MG4/S (SIP Gateway), MG8/S (SIP Gateway), MG4/O (SIP Gateway), MG8/O (SIP Gateway), MG8/SO (SIP Gateway), MG24/S (High Density SIP Gateway), MG48S (High Density SIP Gateway). Features include MG VoIP calls to PSTN, extention-to-extension dialing, hold capability, and deployment extensions.

NETWORKING & VPN

Apparent Networks PathView Cloud

Apparent Networks released a free version of its new PathView Cloud offering, a hosted network management tool that measures the performance of complete network paths from source to destination. PathView Cloud even includes segments that pass through service providers' and carriers' networks. PathView Cloud enables IT teams and network managers to assess, troubleshoot, and continuously monitor a total of five network paths simultaneously. The hosted version of PathView gives IT teams visibility and end-to-end management for five network paths at no cost or obligation.

Apposite Technologies Linktropy Mini2

Apposite Technologies is offering the Linktropy Mini2, which is a smaller version of the Linktropy WAN emulator. The Linktropy Mini2 is designed to be an inexpensive and easy-to-use WAN emulator that simulates WAN links of up to 100Mbps. Additionally, the Linktropy Mini2 emulates basic wide-area network bandwidth, delay, and loss conditions, which assesses the performance of networking programs to test products and perform customer demonstrations. The Linktropy Mini2 is the replacement for the Linktropy Mini, but it provides the same features and performance. However, the Linktropy Mini2 is more compact and uses less energy.

Aruba Networks AP-105

Aruba Networks released the AP-105, a compact dual-radio 802.11n access point. Priced at $695, Aruba expects the AP-105 to accelerate adoption of 802.11n by offering enterprise-grade security, high throughput, streaming video support, and other features previously available only in more expensive devices. The AP-105 offers a dual radio, and the 2x2 MIMO design delivers up to 300Mbps per radio. The integrated antennas support both wall and ceiling mounting. TPM (Trusted Platform Module) securely stores network credentials and cipher keys to protect network integrity even if the access point is probed or stolen. ARM (Adaptive Radio Management) enhances performance by managing client behavior.

Black Box LanScope Network Analyzer

Black Box launched the LanScope Network Analyzer. The analyzer helps install, monitor, maintain, upgrade, and troubleshoot networks. LanScope is a single tester that enables LAN installers, technicians, managers, and service providers to

quickly maintain and optimize 10/100/1000BASE-T networks. It can be used to discover and identify network devices and nonintrusively monitor and generate network traffic to identify protocols, port usage, VoIP statistics, and network utilization. Other functions include cable testing, link detection, data filtering, IPv6 detection, PING and trace, PoE measurements, and email information. The analyzer features two RJ-45 ports and can be used in three test modes—inline, single-ended, and dual independent.

Citrix Enhanced XenApp 5

Citrix introduced its updated Citrix XenApp 5, which is an application virtualization product that centralizes applications and controls and encrypts access to data and applications to reduce costs and improve security, respectively. Features include the ability to deliver on-demand applications from Windows 7-, Vista-, and Windows XP-based virtual machines; policy-based power management capabilities for improved server farm performance at reduced power demands; and integrated HDX MediaStream for high-definition Flash support.

Citrix NetScaler MPX 10500 & MPX 12500

Citrix launched two midrange Citrix NetScaler MPX application networking

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systems ideally suited to enterprise data centers, cloud providers, and Web sites. The midrange NetScaler MPX 10500 and NetScaler MPX 12500 models feature between 5 and 8Gbps HTTP performance and support L4-7 load balancing, application acceleration, server offload, application firewall security, and more. The Citrix NetScaler MPX 10500 and MPX 12500 appliances start at $42,000.

■ Citrix NetScaler VPX & Citrix Ready Open Networking Program

Citrix announced the Citrix NetScaler VPX virtual appliance, an application and delivery and load balancing solution, along with the Citrix Ready Open Networking Program to support it. A partner ecosystem to support Citrix NetScaler VPX is established by the new program. The Open Networking Program is designed to simplify the creation of powerful virtual networking programs that ISVs, enterprise customers, and cloud infrastructure providers can integrate with an extensive range of partner solutions that are already verified to work with NetScaler VPX.

■ Consonus Virtual Infrastructure Service

Consonus introduced the Consonus VIS (Virtual Infrastructure Service). The cloud computing program is engineered to help midsized enterprises that have difficult uptime requirements and limited time, resources, and capital to run both virtual and onsite environments. Consonus VIS can manage large data demands without expensive computing infrastructure investment. Consonus VIS is hosted and managed in a fully redundant and secure SAS 70 Type II-certified data center, offers a fully integrated disaster recovery solution, and is supplemented by the Consonus financial and technical squads.

■ Datawatch Dashboards

Datawatch announced Datawatch Dashboards, a business intelligence device that provides users of all levels with visual insight into operational performance. It also graphically monitors certain business processes and events. Datawatch Dashboards is designed to be flexible and can operate as a standalone tool or work in conjunction with other software. Datawatch Dashboards is engineered to make accessing data from several sources simple and features a single screen that consolidates and assembles important data and facilitates one-click drill-down to detailed data. Data Dashboards is also interactive, customizable, and designed to be easy to use and to deploy.

■ EMC Connectrix MP-8000B Switch

EMC released the EMC Connectrix MP-8000B switch, which expands the company's FCoE (Fibre Channel over Ethernet) technology. The company says the addition of the MP-8000B allows for server and cable consolidation via FCoE and CEE (Converged Enhanced Ethernet) standards to move data between physical and virtual servers and storage systems over 10GbE networks. The switch is based on OEM technology from Brocade, letting LAN and storage traffic transfer on one 10GbE link, which omits the need for separate SAN and LAN adapters and cables. The switch includes eight 8Gbps Fibre Channel ports and 24 10GbE ports, with the 10GbE ports supporting CEE. EMC says the switch is based on FOS (Fabric OS) with extensions that cover FCoE and CEE. Connectrix Manager Data Center Edition software manages the switch, allowing for the management of traditional Fibre Channel SAN and FCoE/CEE settings from one application.

■ EMC Ionix Data Center Insight

EMC introduced its Ionix Data Center Insight, which combines dependency mapping and discovery across storage, network, server, and application domains to let users convert their configuration management databases into fully federated configuration management systems. Ionix Data Center Insight is capable of automatically populating both EMC and third-party configuration management databases with best-practices configuration items; visualizing application and service dependencies across the data center; and helping users achieve a single, accurate and up-to-the-minute view of the IT environment. Ionix Data Center Insight starts at $40,000.

■ Gigamon GigaStream

Gigamon announced GigaStream, a trunking technology for traffic load balancing that aims to eliminate bottlenecking. Designed to provide the highest port density and lowest latency available, GigaStream can bundle either GigaVUE tool ports or stack ports to enhance security, speed, and performance in large-scale data centers that demand massive port density. Other features include cross-box connectivity with any of the GigaVUE platforms, which incorporates hundreds of ports into a network-wide Data Access Network fabric, and the ability to handle 2.2TB of bandwidth per second on a multi-chassis stack star configuration. Users can bundle up to eight 10GB ports between chassis or to a network tool, increasing chassis-to-chassis bandwidth to 80GB.

■ Lumeta IPsonar Network Discovery & Mapping, Hitachi IT Operations Analyzer ISV

Lumeta joined with Hitachi Data Systems to release the IPsonar network discovery and network mapping solution for SMEs and midmarket organizations. With support for Hitachi IT Operations Analyzer version 1.2, IPsonar measures network topology, address space, leaks, and device fingerprints. Lumeta has integrated the Hitachi IT Operations Analyzer ISV (Independent Software Vendor) to monitor, discover, and report device activity and global network visibility. Together, the IPsonar product and Hitachi IT Operations Analyzer allow for flexible control and end-to-end network visibility.

■ ManageEngine SupportCenter Plus

ManageEngine unveiled the most recent version of ManageEngine SupportCenter Plus for enterprise software support. Operational from a single console, ManageEngine SupportCenter Plus incorporates CTI (Computer Telephony Integration) to automatically match the user's incoming number, providing the capability to diagnose and correct PC and network problems in a short period of time. ManageEngine SupportCenter Plus supports both Windows and Linux platforms. Pricing for two users running the Standard Edition is $495; the Professional Edition starts at $995 for two users.

■ New Boundary Prism Suite 10

New Boundary announced its Windows configuration management solution, Prism Suite 10. Prism Suite 10 offers enterprises complete control over distributed IT and mobile networks with fully automated software deployment, IT asset management, and patch management capabilities. Other features include individual software license usage tracking, which allows administrators to reallocate software licenses based on employee usage patterns; network discovery and inventory management, which gives staff total visibility and control over all IT assets; and advanced software license management, which enables staff to reduce operational costs by ensuring regulatory compliance.

■ Opto 22/N-TRON Ethernet Network Switches

Opto 22 partnered with N-TRON to promote a series of industrial Ethernet switches and wireless access points. N-TRON switch features include steel enclosures, resistance to extreme operating temperatures, shock resistance, vibration resistance, and redundant power inputs. The line of switches is ideal for power utilities, electrical substations, and independent processing facilities. N-TRON switches boast port trunking, port mirroring, and IGMP (Internet Group Management Protocol) snooping. N-TRON's 508 series includes plug-and-play features, no IP configuration, and increased security across the network.

■ RLE Environet V3 Monitoring System

RLE announced that it has integrated RF Code's active RFID solution into its Environet V3 monitoring system. With Environet's integrated system, users are able to monitor, control, and manage assets within their facilities. Along with Environet's expansive standard set of features, the addition of active RFID lets users know in real time the exact location and instant movement of data center and rack assets, including servers and switches. Environet enables clients to view many types of monitoring systems with various communication protocols in a single-pane and easy-to-use Web interface.

■ Stromasys CHARON-AXP/4100

Stromasys announced the CHARON-AXP/4100, a product that offers exact virtualization of the AlphaServer 4100, 4000, 2100, and 2000. The CHARON-AXP/4100 offers a solution to migration from the retired HP Alpha computer range. It creates the environment of the Alpha computer that needs to be replaced inside a modern general purpose computer, so you can run your Alpha-based applications on a different host computer without changing the software. For almost every Alpha computer manufactured by Digital Equipment, Compaq, and HP, Stromasys can provide a virtual equivalent.

■ Transition Networks Managed Industrial Switch

Transition Networks announced the Managed Industrial Switch (SISTM1040-162D-LRT), an industrial-hardened device designed to offer high-port count density network attachment to devices in industrial and outdoor environments. It is a fully managed and ruggedized 16 +2-uplink port switch and is designed to reliably operate in harsh networking environments found on factory floors, outdoor enclosures, or other hazardous environments. It features 16 10/100Base-TX RJ-45 ports plus two 10/100/1000Base-T RJ-45 or 100/1000-Base-X SFP combo ports. The RJ-45 ports support Auto-negotiation and AutoCross (auto MDI/MDI-X), and the SFP ports support both 100Base-FX and 1000Base-X SFP optics. The switch offers software support for IEEE 802.1Q VLANs, IEEE 802.1P Class of Service, IGMP for multimedia applications, X-ring, dual homing, and couple and dual ring topologies providing redundant backup and recovery times below 20 milliseconds.

■ Verizon Business Managed Router Solution

Verizon Business announced the release of the Verizon Managed Router Solution featuring dedicated high-speed Internet access, proactive monitoring, and high maintenance availability. Designed specifically for small to medium-sized enterprises, the Verizon Managed Router Solution provides consistent connectivity. Verizon's solution supports Cisco 1800 Series Integrated Services Routers, Cisco 500 Series Secure Routers, and Cisco 800 Series routers. Other features include onsite installation, round-the-clock monitoring, Cisco maintenance, a managed firewall, and intrusion prevention.

■ Voltaire 40Gbps InfiniBand Blade Switch Module

Voltaire announced the 40Gbps InfiniBand Blade Switch Module, which it says is the industry's first SSI (Server System Infrastructure)-compliant InfiniBand switch for blade server systems. The switch is based on Voltaire's field-proven design and features scalable, high-performance, and energy-efficient connectivity for clustered blade solutions; 14 40Gbps internal ports for server connectivity; 16 external QSFP ports for fabric connectivity; port-to-port latency of less than 100 nanoseconds; and energy consumption of 4W per port.

PHYSICAL INFRASTRUCTURE

■ Chatsworth Products Enterprise Infrastructure Solutions

Chatsworth Products released its Enterprise Infrastructure Solutions, designed to manage, meter, monitor, and control IT infrastructure and devices from a centralized location. With Enterprise Infrastructure Solutions, Chatsworth offers a tailored data center operations product that consists of CPI's Scalable Enterprise Management Application Software for metering, monitoring, and control; CPI's KVM Systems for optional IP capability and support for up to 42 ports per switch; CPI's Power Management component for basic, metered, monitored, and controlled power solutions; CPI Passive Cooling for 2 to 30kW of cooling; and F-Series TeraFrame and T-Series SteelFrame Cabinet enclosure families that let users customize the system to their specific needs.

■ Chatsworth Products F-Series TeraFrame Cabinet System (Gen 2)

Chatsworth Products announced several accessories for its F-Series TeraFrame Cabinet System (Gen 2). The add-ons bring additional thermal management, cable management, power management, and cabinet baying options to the Chatsworth family of products. The accessories include the Vertical Exhaust Duct for 800 mm Cabinet, Bottom Panel for the CPI Passive Cooling Solution, Vertical Cable Manager, Slide Adapter Kit, Front-to-Back Cable Manager, Vertical Cable Ring Manager, Cable Lashing Bracket, Power Strip Lashing Bracket, Seal Kit for the CPI Passive Cooling Solution, Zero Spacing Baying Kit, Narrow Baying Kit, 24-inch Baying and Fascia Kit, and 24-inch Baying Brackets.

SECURITY

■ Accellion Managed File Transfer & Fidelis Security Systems XPS

Accellion and Fidelis Security Systems announced a partnership to provide corporations with a way to stop data leakage of confidential information at the file transfer source. The two companies will integrate Fidelis XPS and Accellion's Managed File Transfer solution to secure data transfers and also define and enforce corporate content-based policy decisions to control information sharing. The Accellion Secure File Transfer solution allows enterprises and government agencies to securely send and receive large files and folders up to 20GB. It features an authentication checkpoint, which validates recipients so confidential information is not overexposed and provides an audit trail for tracking and reporting who received a file and when.

■ Agiliance Privacy Manager

Agiliance Privacy Manager has been introduced to the current suite of GRC (Governance, Risk, and Compliance)

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applications available from Agiliance. Enterprises are able to manage privacy compliance, reduce risk, and demonstrate due diligence by proactively assessing privacy risks with this new application. Agiliance Privacy Manager lets enterprises perform assessments for compliance or impact from an interactive Web-based application; distribute privacy policies; measure privacy risk, compliance, and awareness; and manage privacy incidents with closed loop mitigation. Other features include privacy reports and dashboards, privacy incident management, and common control framework.

■ BMC Software BladeLogic Client Automation & McAfee Policy Auditor, McAfee ePolicy Orchestrator & McAfee Labs

BMC Software and McAfee have integrated BMC BladeLogic Client Automation (formerly BMC Configuration Automation for Clients) with McAfee Policy Auditor, McAfee ePolicy Orchestrator, and the security and remediation content of McAfee Labs. As a single program, users will benefit from its ability to identify, report, patch, and remediate policy violations so organizations will stay in compliance with corporate policies and federal regulatory requirements. The goal of the integration is to eliminate conflict and align IT and security in order to reduce costs.

■ Codenomicon DEFENSICS For XML

Codenomicon announced DEFENSICS for XML, which is designed for XML security testing. It assists software developers and integrators in discovering zero-day security problems in XML libraries and applications and offers a feature designed for intelligently and efficiently testing common XML-based protocols and file formats. DEFENSICS for XML is beneficial to banking infrastructure, Web services, industrial automation (SCADA), and technologies such as .NET, SOAP, and VoIP. It is designed to give developers the leverage they need to discover vulnerabilities before they are exploited by cybercriminals by using a fuzzing technique, which drastically alters XML message structures.

■ Fujitsu Cloud-Based Security Services

Fujitsu has expanded its North American alliance with Check Point Technologies to release pay-as-you-go cloud-based security services for enterprises. The move combines Fujitsu's global data center abilities

and server, storage, and mobile technologies with Check Point's security software to offer end-to-end security services and products for delivery anywhere globally. Highlights of the partnership include consolidation, standardization, and centralized management through a single gateway or agent on the desktop replacing a security stack of up to 10-plus security apps or devices. Additionally, innovative enterprise and IT solutions are aimed at increasing an enterprise's competiveness. Fujitsu says these solutions integrate the company's intellectual property in such areas as software, hardware, and services with partners.

■ M86 Security WebMarshal 6.5

M86 Security released the WebMarshal 6.5 to optimize Web threat security, Web access control, and data leakage prevention. WebMarshal 6.5 is available in conjunction with TRACEnet technology with customer service features and performance standards. M86 WebMarshal 6.5 monitors incoming and outgoing Web traffic by utilizing malware detection, enhanced URL filtering, reporting, and Web access policy to protect enterprises from Web-based attacks. Other elements include malware threat protection; highly granular filtering; proxy caching; and SafeSearch, which protects search engine queries. Pricing starts at $36 per seat for 25 users and $9 per seat as networks grow.

■ MailFoundry Anti-Spam 6100 & 8100

MailFoundry released upgraded versions of its Anti-Spam 6100 and 8100 appliances. MailFoundry says the platforms will provide increased message output and capabilities in combating email threats by using multicore CPU engineering, which gives the company's MessageIQ antispam engine enterprise- and service provider-related abilities. The company also says MessageIQ is the only antispam engine that uses RedListing technology that works on the network level to combat botnets with zero false positives and 100% effectiveness. MessageIQ doesn't use heuristics or learning technology. Instead, it targets spam with smart antispam profiles. The appliances start at $1,299.

■ Radware DefensePro 5.0

Radware announced the release of version 5.0 of DefensePro, its intrusion prevention system. DefensePro 5.0 is intended to protect enterprises' application infrastructure

against cybersecurity attacks by detecting and neutralizing security breaches without blocking legitimate users. DefensePro uses a hardware acceleration engine to offer DDoS attack mitigation up to 10 million packets per second. DefensePro 5.0 offers companies reduced CAPEX and OPEX and provides greater business continuity.

■ SecPoint Penetrator 7.0

SecPoint released Penetrator 7.0, a penetration tester, available in appliance and laptop form. Penetrator 7.0 looks for vulnerabilities to SQL injection and cross-site scripting attacks using local or remote crawling and scanning. It's also designed to probe WEP-, WPA-, and WPA2-secured wireless networks for security holes. Moreover, it can report the results of branch office and remote site scanning to a central location.

■ TippingPoint 110 & 330

TippingPoint introduced two IPSes designed to secure network traffic for SMEs. The TippingPoint 110 and TippingPoint 330 are ideal for organizations with remote or branch offices as well as managed security service providers that want to deliver dedicated protection services for their customers' assets. Both models provide comprehensive traffic inspection and filtering using TippingPoint's Digital Vaccine service to identify and block security threats before they affect the network. The 110 and 330 can be managed locally or by using the TippingPoint SMS (Security Management System) for more robust management and reporting options.

■ Voltage Security SecureData

Voltage Security announced the latest features for its data protection solution, SecureData. This version includes tokenization and data masking capabilities with the existing encryption functionality. When SecureData is combined with other Voltage offerings such as SecureMail and SecureFile, companies can take advantage of a full data protection solution that features a common framework and centralized stateless key management. SecureData's other features include data de-identification. All of the features offer protection for all types of structured and unstructured data, such as primary account numbers, Social Security numbers, birthdates, images, and other personal or sensitive information.

■ WatchGuard Technologies 3G Extend USB

WatchGuard Technologies announced the WatchGuard 3G Extend USB, a tool designed to complement and extend the capabilities of its family of UTM (unified threat management) network security appliances. Designed for enterprises that need high-speed WAN connectivity where hardwired broadband is too costly or unavailable, the 3G Extend USB acts as a true L2TP 3G wireless bridge to bring Internet connectivity to WatchGuard UTM appliances and supports a range of cellular radio modems from more than 2,000 ISPs. The 3G Extend USB features primary and failover 3G connectivity to any WatchGuard security appliance; a modular design; and support for most major CDMA, EDGE, EVDO, GPRS/UMTS, and HSDPA cellular high-speed radio cards.

SERVERS

■ AMD Six-Core Opteron Processor With AMD Chipset Platform

AMD released a server platform to support its six-core "Istanbul" Opteron chips and, in Q1 2010, the upcoming "Magny-Cours" processors. Based on the company's "Kroner" twin server design specification, the unified platform supplies high performance on very little power, AMD says. It features support for HyperTransport 3 and PCI Express 2.0 as well as for IOMMU, AMD-P, and AMD-V virtualization. Users can also set power limits remotely.

STORAGE

■ Addonics Technologies HPM XA

Addonics Technologies unveiled a hardware port multiplier, the 5-port HPM XA, in which one SATA port can support up to five SATA drives. Available in a system edition as well as in a rackmountable enclosure, the HPM XA supports hot-swappable devices in Windows, Mac, and Linux systems. It comes with RAID management software and jumpers, and it is daisy-chainable. Among the HPM XA's varied features is the ability to attach hard drives into a single volume as well as to link to multiple optical drives for simultaneous duplication or file transfers, Addonics says. Both versions of the HPM XA cost $99.

■ Ardeo Logic vDCR Backup & Restore

Ardeo Logic unveiled its backup product for VMware vDCR Backup & Restore. The company says it's the first solution with support for vSphere 4 vStorage. vCDR can do free backups directly from SAN to SAN LAN, Ardeo Logic says, and it natively supports thin-provisioned drives. It also uses ESX4 to track changed storage blocks. Prices start at $499 per socket, and there's a 30-day free trial.

■ Arkeia Software Network Backup Version 8.1

Arkeia Software launched Arkeia Network Backup Version 8.1, which provides new features designed to make backup management of hosted programs, including multitenant servers, easier. Engineered to let system administrators assign restoration rights to end users, CROs (Custom Restore Objects) are new to Arkeia Network Backup v8.1. Additionally, administrators have less work because they are able to remove themselves from the data restoration process, and service to the end user is better thanks to features that let end users recover data at any time.

■ ATTO Technology ExpressSAS R380 & LaCie 12big Rack Serial

ATTO Technology and LaCie have forged an OEM partnership the companies say is designed to provide integrated SAS/SATA and Fibre Channel storage to digital video and IT customers. Through the partnership, the companies will offer two product combinations, including the ATTO ExpressSAS R380 SAS/SATA host adapter combined with the LaCie 12big Rack Serial. The ExpressSAS R380 offers 8X PCI-E technology and 3Gbps SAS speed to provide RAID-protected connectivity to the 12big Rack Serial. The other offering will combine the ATTO Celerity FC-42ES Fibre Channel host adapter and LaCie 12big Rack Fibre storage system. The Celerity FC-42ES offers 800MBps speed. The companies say both combinations give users the capability to edit multiple streams of uncompressed HD video while also providing a stable, robust RAID-protected infrastructure.

■ CMS Products BounceBack Ultimate & BounceBack Essential

CMS Products announced free 30-day trial versions of BounceBack Ultimate and BounceBack Essential. Termed "Instant PC Recovery Products," the two software tools are designed to offer instant recovery in the event of a PC crash, be it from hardware or operating system malfunction. Users can boot the crashed system with a USB-connected external hard drive with no data loss, allowing them to replace or fix the problem area in a convenient timeframe instead of immediately.

■ Crossroads Systems SPHiNX For Power Systems

Crossroads Systems announced SPHiNX for Power Systems, a virtual tape product intended for use alongside large data centers using IBM i, AS/400, iSeries, and System i. SPHiNX for Power Systems is designed to help organizations improve the efficiency and effectiveness of physical tape storage, enhance data backup and restore, and provide for significantly more secure and protected data. SPHiNX is designed to offer the highest level of data security and privacy requirements to help fulfill HIPAA and state information protection mandates.

■ Dot Hill RAIDCore VRA

Dot Hill released the latest addition to its RAIDCore family of Windows and Linux server-based data protection products. RAIDCore VRA (virtual RAID adapter) technology, aimed at OEMs and ODMs, agnostically supports various disk controllers with a single interface. It's designed as a data protection feature that can cost-effectively be built into entry-level server motherboards, providing enterprise features such as boot drive protection, online RAID migration, consistency checks, online capacity expansion, and background scrubbing. Write caching helps the VRA version of RAIDCore outperform even hardware RAID products, Dot Hill claims, thanks to the proliferation of multicore processors and the growth of RAM in servers. The software supports RAID 0, 1, 5, 10, and 50 for SATA and SAS drives.

■ EMC Data Domain Replicator

EMC launched an enhanced version of its Data Domain Replicator software with cascaded replication, which lets users employ network-efficient replication to electronically transfer deduplicated backup and archive data offsite or to an alternate destination. The enhanced offering also supports up to 180-to-1 remote site fan-in to a single controller, which results in up to 100%-faster directory replication throughput. EMC's Data Domain deduplication storage systems are designed to fully integrate with IT environments and

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leverage popular enterprise backup and archive utilities, network types, and transfer protocols, such as CIFS, NFS fileserver over Ethernet, Virtual Tape Library over Fibre Channel, and the OpenStorage interface.

■ IceWEB Iplicity Cloud Storage Appliance

IceWEB announced the Iplicity CSA (Cloud Storage Appliance) line, which can be deployed either as SAN or NAS devices. The Iplicity CSA line delivers high-performance scalable capabilities that are easily, rapidly, and securely deployed in a centrally managed private storage cloud or in a hybrid public/private cloud configuration. With quick and easy deployment, enterprises are able to serve data in less than 20 minutes, the company says. An easy-to-use graphical user interface offers straightforward management of the appliance. The line supports a wide range of protocols, including FC, NFS, and iSCSI, which gives enterprises data access flexibility.

■ InMage Scout 5.1

InMage announced version 5.1 of Scout, its backup and disaster recovery platform. Scout 5.1 provides enhanced support for larger environments, including managed service provider customers. Other features include improved scalability from the new RX Enterprise Dashboard, support for 64-bit Sun Solaris running on both SPARC and Intel x86 platforms, push installation support, and a new software architecture.

■ NetApp FAS2040 Storage System

NetApp released the FAS2040 storage system, which provides midsized enterprises with the ability to handle Microsoft Windows consolidation and virtualization workloads on

the same system. Additionally, NetApp is cutting the price of the FAS2020 storage system and related software. The FAS2020 system is preconfigured with high-capacity drives and all protocols. The FAS2040, which is part of NetApp's entry-level FAS2000 product line, uses NetApp's unified storage architecture and efficiency features to provide double the performance of existing FAS2000 storage systems while upping storage capacities by 30%. The additions make the FAS2040 ideal for tackling workloads in Windows consolidation and virtualized settings, NetApp says. The updated FAS2020 starts at $7,920 and provides multiprotocol support (CIFS and NFS included).

■ NetApp SnapMirror Native Network Compression

NetApp enhanced SnapMirror thin replication by adding native network compression for increasing network bandwidth. In addition, FlexClone copies support efficient replication for intelligent analysis, testing, and development. Overall, native network compression is designed to better manage bandwidth and storage needs.

■ Oracle Secure Backup 10.3

Oracle released the latest version of its Secure Backup, which is a centralized tape backup management offering. Oracle Secure Backup 10.3 features server-less tape duplication; hosted backup encryption; support for LTO-4 tape drives to offload encryption processes; improved automation management; support for Internet Protocol version 6; enhanced tape vaulting; and support for HP-UX Itanium, AIX, Linux, Windows, and Solaris SPARC platforms. Oracle Secure Backup 10.3 is licensed at $3,500 per tape drive, which includes protection of unlimited servers, NAS devices, and Oracle Databases.

■ Reldata 9240i

Reldata announced the 9240i, the latest unified storage system to serve as its flagship product. It's intended for cloud computing and virtualized environments. The x86 standards-based system uses Reldata's RELvos 2.4 operating system and one or two controllers to bring SAN and NAS storage into a consolidated, manageable whole. Prices start at $21,891 (6TB).

■ Sans Digital TowerRAID, AccuSTOR

Sans Digital announced two series of inexpensive SAS/SATA RAID subsystems. The TowerRAID SAS series comes in 4-drive (the TR4XHA and TR4X-BHA) and 8-drive (the TR8XHA and TR8X-BHA) editions for SMEs and consumers. The AccuSTOR SAS series comes in a 2U 12-drive version (the AS212X2HA) and a 3U 16-drive unit (the AS316X2HA). With support for RAID 0, 1, 0+1, 3, 5, 6, 30, 50, or 60, the AccuSTORs can handle demanding enterprise environments.

■ Seagate Secure

Seagate announced a self-encrypting option for its enterprise hard drives. The company's Seagate Secure option is available on Savvio 15K.2 and 10K.3, Cheetah 15K.7, and

Constellation drives. When used with compatible server controllers, the drives natively encrypt their data with little impact on performance. Seagate Secure provides immediate, full-time hardware security against theft, post-EOL data recovery, and other risk scenarios, the company says.

■ StorageCraft Technology ShadowProtect 3.5

StorageCraft Technology released the StorageCraft ShadowProtect 3.5, which updates the company's line of disk-based backup, disaster recovery, and system migration software. Among this release's features is the ability to back up failing hard drives in order for IT administrators to retain as much data as possible. The company says the feature lets users continue a backup session even when areas of a hard drive are no longer readable. ShadowProtect 3.5 can notify users when a drive is beginning to fail. Other features include enhanced email notification, management over starting backups, management over hardware independent restore features, and a better boot configuration tool.

■ Tandberg Data DAT72 & DAT160

Tandberg Data announced it is offering DAT tape drives and media products designed to protect SME data. The DAT tape cartridges are compact and lightweight; come in 72GB or 160GB capacities; and offer internal, external, or rackmount configuration options and SCSI or USB interface options. The DAT160 supports WORM (Write Once, Read Many) functionality for data retention regulation compliance. The DAT72's ESP starts at $499, and the DAT160's starts at $749 (three-year warranty and one-year Advanced Replacement Service included).

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This is a small snapshot of the 7,000 SKUs in stock LARGEST cable inventory worldwide:

DISK & TAPE
Part Number ……Price
RD53-DA $895.00
RD54-AA $995.00
RZ29L-AA/VA..... $175.00
RZ28-VA $145.00
RZ1DD-SW/VW $60.00
RZ28-VA $295.00
TLZ09-VA..... $295.00
TLZ10-VA..... $385.00
TZ87/TZ88/TZ89 .....Starting at $125
TSZ08-AA $1,995.00
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DNPG Network
DEZ8R-P $1,290.00
DEFHM-MM $5,800.00
DEFEA-FB $1,275.00
DSGGD-BA $1,500.00
DZRVW .....Starting at $500

All Compaq HP Blades Start at $595.00
DS10 ..... $675.00
DS20 .....Starting at $1175
GS80 .....$2,900.00
GS160 .....Starting at $3,900
GS320 .....Starting at $5,900
RL01/RL02.....Call
RA60-P .....$475.00 New
RA81 H.D.A.....$775.00 New
RA82 H.D.A..... $775.00 New
2T-48VDC ..... $3,400.00 New
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ES40 ..... $1,295.00
ES45 ..... $3,195.00
ES47 ..... $4,195.00

Proliant Servers / HP Blades
AJ 742A $4,175.00
AJ 753A $5,175.00

Disks
AJ 736A $535.00
AJ 737A $825.00
AJ 738A $385.00
AJ 740A $675.00

Memory
413015-B21 ..... $1,290.00
397413-B21 ..... $375.00

HBA Fibre Channel
AE311A $815.00
A8003A $765.00
LPE12000 ..... $840.00

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Part Number	Description	Price
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GF918AT	6510B - T7100/1.80GHz-2M/80GB/DVD-CDRW/WLAN/14"	$395.00
KW403AV	2730P - U9300/1.2GHz-3M/2GB/80GB/BT/WLAN/12"	$695.00
Servers		
456830-001	DL180R05 - 1P4C XN E5420/2.50GHz-12M/1GB(1X1GB)/1PWR	$850.00
439191-001	DL365R01 - 2P4C OPT 2220/2.8GHz-2M/2GB (4X512MB)/DVD-CDRW/2 PWR/P400-256MB	$1,100.00
500922-001	DL585R05 - 4P16C OPT 8360/2.50GHZ-2M/16GB (8X2GB)/DVD-CDRW/2PWR/P400-512MB w/BBWC	$5,950.00

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News

Microsoft Calls For Patent Reform

Microsoft believes it's time for a single global patent system controlled by a single worldwide patent authority.

Horacio Gutierrez, corporate vice president and deputy general counsel for Microsoft, expressed his concerns over the current global patent system in a recent blog post. The call for reform came after Microsoft's patent infringement conviction in a Texas court. The ruling by the U.S. District Court for the Eastern District of Texas had barred Microsoft from importing or selling its Word products (including Word 2003 and Word 2007) that support custom XML files. That injunction has since been put on hold pending appeal by Microsoft.

In his blog entry, Gutierrez urges David Kappos, undersecretary of commerce for intellectual property and director of the U.S. Patent and Trademark Office, to promote "patent harmonization."

"In today's world of universal connectivity, global business, and collaborative innovation, it is time for a world patent that is derived from a single patent application, examined and prosecuted by a single examining authority, and litigated before a single judicial body," Gutierrez says. "A harmonized, global patent system would resolve many of the criticisms leveled at national patent systems over unmanageable backlogs and interminable pendency periods."

Pending Patents

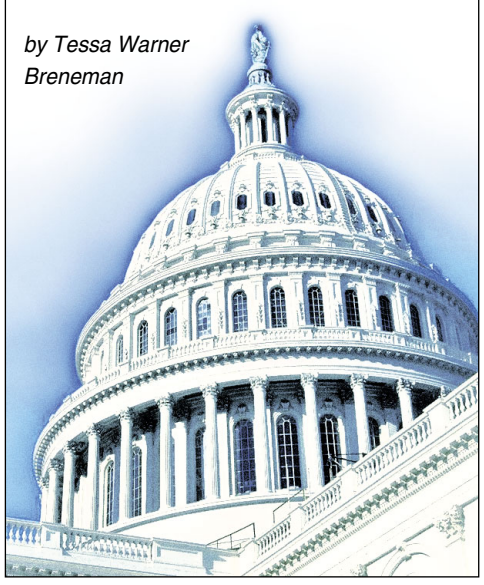
Gutierrez says there are more than 3.5 million pending patent applications across the globe, which includes more than 750,000 in the United States alone. Pendency periods, says Gutierrez, can last three to five years before final patents are issued, which increases the cost and workload for both patent applicants and patent offices.

"Delays in securing patents are too long for entrepreneurs and large enterprises alike," Gutierrez says. Gutierrez also suggests using a common digital application format and settling on shared criteria for "patentable subject matter, adequacy of disclosure and enablement requirements, and the completeness of the examination record."

Kappos has spoken about his strong desire to reform the current global patent system. At the annual Intellectual Property Owners meeting, Kappos said he hopes to specifically reform pendency. "We are working on new programs to help cut pendency across the board, such as one that would allow an applicant to select an application to advance in the queue in exchange for each application they withdraw before substantive examination," Kappos said.

Kappos also said he is looking to reduce pendency for growth segments such as green technologies.

by Tessa Warner Breneman



FEATURED PRODUCT

Guarding The Data Center

Sensatronics' Senturion Helps IT Managers Keep Tabs On Their Environmental Conditions

by Joseph Pasquini

• • •

FLUCTUATING ENVIRONMENTAL factors can quickly wreak havoc on infrastructure hardware and the core business systems that such components ultimately support. Computer rooms of all kinds—from a server in a broom closet all the way up to a full-fledged professional data center operation—all demand inherently stable environmental conditions. IT managers know all too well about the sleepless nights that often stem from temperature increases, changing humidity levels, and water damage.

With a history dating back to 1991, New Hampshire-based Sensatronics (www.sensatronics.com) understands the need to catch problems before they cause major failures. Sensatronics' product lineup features a series of environmental monitoring appliances as well as associated probes and cameras. The Senturion Environmental Monitor is the flagship of its product portfolio.

Specifically For IT

The Senturion was designed as a self-contained yet scalable turnkey rackmount unit suitable for monitoring temperature, relative humidity, light, and noise levels.

According to Michael Spurr, Sensatronics' president and COO, the Senturion product line was engineered from the ground up as an IT-specific, industrial-grade monitoring tool that could be expanded as the needs of the data center changed. "Unlike consumer-grade products on the market, the Senturion was developed specifically for the IT environment and has the features most often requested by IT professionals," says Spurr.

"IT infrastructure investment can easily reach hundreds of thousands or millions of dollars," adds Spurr. "The Senturion protects that investment from loss due to unforeseen environmental extremes like temperature or water. The Senturion also allows IT centers to run closer to the new ASHRAE (American Society of Heating, Refrigerating, and Air-Conditioning Engineers) guidelines with confidence." A simple "yes/no" internal sensor within the appliance lets administrators keep tabs on the status of localized airflow across its chassis. In addition, the Senturion comes equipped with a light sensor that can be useful in detecting changes in lighting conditions from 0 to 5,000 lux, which may potentially indicate the presence of intruders.

"Senturion helps IT departments prevent and solve problems," says Spurr. "For example, AC failure in certain critical areas, inaccurate or unreliable environmental monitoring, or the need for an ongoing, granular profile of data center temperatures so that the data center temperature can be raised a few degrees to save on energy costs or problems with hot spots can be resolved." The Senturion also provides managers with historical data for viewing trends over time or comparing one monitored point to another.

Easy Implementation

Spurr asserts that the 1U rack-mountable Senturion is uniquely positioned within its market segment thanks to the ease with which the monitoring system can be quickly deployed. "Setup, configuration, and firmware upgrades are easy," explains Spurr. "Take the Senturion out of the box, pop it into the rack, and start monitoring in minutes." The built-in sensors are thermally isolated from heat generated by the unit's internal circuitry, allowing for a higher level of intrinsic accuracy. The Senturion also has built-in cable management guides for neatly routing network and external probe cabling.

The Senturion features a built-in real-time Web interface for monitoring and management over the network. Everything necessary for monitoring and alerting is built into the unit itself. Although no external software is required, the Senturion does support rapid integration with more than 20 monitoring platforms from companies such as Ipswitch and HP. SNMP support includes SNMP polling, SNMP traps to up to three servers, alert traps, heartbeat traps, SNMP MIB, and logging to a syslog server. Additional extensibility via an open-architecture XML data interface is also supported.

SensaTronics ENVIRONMENTAL SENSING

The integration flexibility offered by the Senturion allows it to quickly be assimilated into the procedural protocols of virtually any data center operation. Administrators may assign granular access rights to individual or multiple users. As alerts occur, key personnel can be notified via email generated directly from the Senturion itself or through an SMTP server. Alerts can also be configured to be sent via SMS messages to cell phone devices; additionally, an optional external dialer can be used to send prerecorded voice message alerts to any phone number.

In addition to network-based notifications, the Senturion also presents information directly at the console via its onboard color display, which shows current temperature, status, humidity, and IP address. "Bright multicolor LEDs give a clear view of the status—the entire face of the Senturion has a pleasant blue glow when all is good and flashes bright red when a threshold has been exceeded," says Spurr. Local alerts using both visual and audible queues can also be configured to require local acknowledgement.

Expandability

Sensatronics offers a variety of accessories for expanding the versatility of the Senturion. In addition to its built-in monitoring capabilities, the Senturion also sports external sensor ports for attaching external probes and cameras.

Provisions for up to eight external probes provide for the additional monitoring of typical parameters such as motion, wetness, smoke, and relative humidity as well as enclosure-based monitoring of rack door status (open/closed), power presence, dry contact to determine normally closed or normally open switch states, and monitoring temperature at the server intakes as per ASHRAE recommendations.

Visual monitoring is also offered by the Senturion via its support of up to four external cameras. Configurations include wired, wireless, stationary, pan/tilt, and infrared.

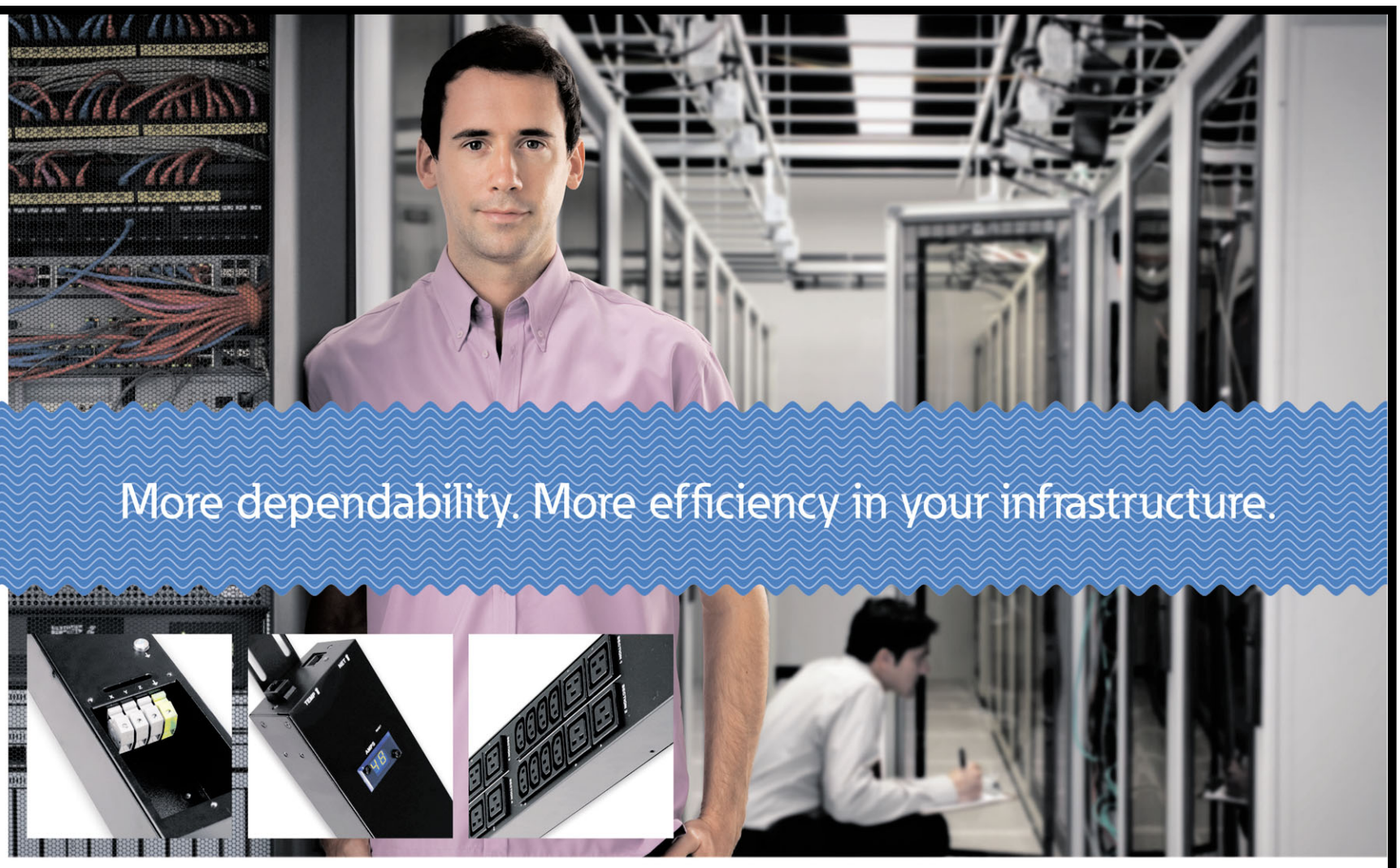
Different From The Rest Of The Pack

Thanks to features such as offset internal sensors for higher accuracies, Spurr contends that the Senturion product line separates itself from the competition. Unlike many other offerings, says Spurr, the Senturion is designed specifically with rack installation in mind. "Many competitors have adapted their products to the rack with flimsy faceplate adapters, external power supplies, etc.," says Spurr. "Sensatronics stands behind the quality of the Senturion with free support, our standard two-year warranty, and the ability to extend that warranty up to an additional three years. Sensatronics engineered Senturion with the performance and reliability that IT departments require to protect their assets." P

Sensatronics Senturion Environmental Monitor
(800) 633-1033
www.sensatronics.com

Description: The Senturion is a self-contained, scalable, rackmount environmental monitor that tracks temperature, humidity, light, and a variety of other environmental conditions.

Interesting Fact: Bucking an ongoing industry trend, Sensatronics does not charge for technical support.



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PRODUCT SPOTLIGHT

Data Center-Grade UPSes

Active Power CleanSource UPS

Active Power's CleanSource UPS system is designed to be reliable, energy-efficient, and battery-free. CleanSource UPS, which uses unique, integrated flywheel technology, protects enterprises with mission-critical operations from short power disturbances on up to complete outages. With an energy efficiency of up to 98% and more than 55 million hours of runtime in the field to date, CleanSource creates a predictable, continuous power system that will ride through power outages to keep critical operations up and running.

- Seven times less likely to fail compared to conventional systems
- Energy efficiency up to 98%
- Battery-free means no damaging battery fumes, gases, or hazardous material
- Space-efficient at a quarter to half of the footprint compared to conventional systems
- Reduces total cost of ownership by 60%
- 75% reduction in carbon emissions

Best For: Companies looking for an energy- and space-efficient data center power solution.

(512) 836-6464
www.activepower.com

Active Power PowerHouse System

The Active Power PowerHouse system is a critical power protection tool in a streamlined, space-saving, containerized package. The system can contain diesel generators, the company's CleanSource flywheel UPS systems, generator starting modules, switchgear, power distribution units, and more. With more than 20 megawatts deployed to date, PowerHouse offers flexibility in placement, space savings, fast deployment, high energy efficiency, and prompt capital deployment to meet IT and business demands.

- Can be used for a variety of applications, including facility infrastructure expansion, disaster recovery, temporary critical power needs, or event support
- Mobile and can be deployed in a number of environments, including roofs, redundant loading bays, secure compounds, or parking lots
- System is pre-engineered and factory-tested: It's a complete, repeatable solution vs. a conventional component-by-component implementation

Best For: Organizations that have limited facility space and want to maximize use of revenue-generating floor space.

(512) 836-6464
powerhouse.activepower.com

Eaton 5130 UPS

The line-interactive Eaton 5130 UPS protects servers, routers, switches, workstations, VoIP, and EDGE/3G/WiMAX wireless networking equipment against costly power fluctuations and outages. Designed to deliver clean, continuous power no matter the state of the incoming utility power, the 5130 is flexible and is available in slim 2U and 3U rack and tower configurations. The 5130's compact size is ideal for dense rack enclosures.

- Flexible UPS
- High-efficiency design reduces heat and expensive cooling costs
- Delivers more wattage with a 0.9 power factor in less space to protect more equipment and leave more room to expand IT systems
- Available in slim 2U (3.5-inch) and 3U (5.25-inch) rack and tower configurations
- User-replaceable hot-swappable batteries

Best For: Organizations with dense rack enclosures and those concerned about power fluctuations and outages.

Price: Starts at $694

(800) 356-5794
www.eaton.com/5130

Eaton 9130 UPS

The Eaton 9130 is an energy-efficient UPS that features smart energy management. The 9130 helps IT managers carry out green initiatives in their IT environments. The 700 to 3,000VA UPS models feature a high-efficiency design that saves energy without sacrificing reliability. Ideal for servers, networking equipment, telecommunications, VoIP, and security systems, the Eaton 9130 delivers clean, continuous power to protect critical equipment from power anomalies in utility power.

- Online double-conversion design
- High-efficiency mode of greater than 95%, reducing heat and cooling costs
- Small form factor—up to 3,000VA in 2U of rack space
- Supports four external battery modules
- 0.9 output power factor
- Load segment control with individual shutdown/startup scheduling capabilities

Best For: Energy-efficient data centers.

Price: Starts at $775

(800) 356-5794
www.eaton.com/9130

PRODUCT SPOTLIGHT

Compiled by Tessa Warner Breneman

Eaton EX UPS

The Eaton EX UPS protects midrange servers, storage devices, telephony equipment, medical devices, and other sensitive electronics equipment requiring continuous, clean power. Complementing this UPS' superior level of protection is a low total cost of ownership and a broad range of high-availability features.

- Online, double-conversion technology for 100% compatibility with any application and high output to protect equipment with PFC power supplies
- Available in tower or high-density, versatile 2U rack/tower form factors
- Wide input voltage window conserves batteries
- Easily add more outlets with Eaton's FlexPDU and HotSwap Maintenance Bypass PDUs
- Extended runtime capabilities with multiple, hot-swappable battery modules (optional)

Best For: Organizations with sensitive electronics equipment requiring continuous, clean power.

Price: Starts at $633

(800) 356-5794
www.eaton.com/ex

Toshiba G9000 Series

The G9000 Series from Toshiba offers 80kVA, 100kVA, 160kVA, and 225kVA models, which are all designed to be either standalone or parallel machines. New models supporting 300kVA, 500kVA, and 750kVA will be available in January. The units feature a double-conversion topology that offers an AC/DC/AC efficiency of about 97% with loads between 50 and 100%. The G9000 Series can be used in configurations of up to eight units without the need for a special switchgear cabinet. The G9000 Series features an all-insulated gate bipolar transistor design that eliminates the need for an energy-stealing, front-end harmonic filter and generates less than 3% input current total harmonic distortion.

- No need for an output transformer, which boosts efficiency and cuts back the noise, weight, and footprint
- The 300kVA, 500kVA, and 750kVA units will feature an input power factor greater than 0.99, an input voltage range of 15 to -20%, and an output power factor rated at unity
- Supports 100% unbalanced loads and 100% step-load changes without battery discharge

Best For: N+1 parallel systems with typical loads between 30 and 40%.

(800) 231-1412
www.toshibaups.com

Emerson Liebert NX With Softscale

Emerson Network Power's Liebert NX UPS with Softscale technology is an online, double conversion, three-phase UPS system that is scalable for growing data centers. The soft-switching technology allows the Liebert NX with Softscale to optimize efficiency while maintaining the highest possible availability with online, double-conversion technology that corrects for all types of power fluctuations. The Liebert NX with Softscale allows growth from 40 to 60 to 80kVA, from 80 to 100 to 120kVA, and from 160 to 200kVA. The UPS also may be paralleled for additional capacity or for redundant operation. A 120/208-volt, three-phase version of the Liebert NX without Softscale technology is available in four sizes, including 10kVA, 15kVA, 20kVA, and 30kVA capacities. The 20kVA and 30kVA models may be paralleled for capacity or redundancy.

- Utilizes Softscale technology
- Online UPS with dual-bus compatibility
- Provides paralleling for capacity or redundancy
- High energy efficiency

Best For: Small to midsized data centers and server rooms.

Price: Starts at $29,000 for 10 to 80kVA units

(800) 543-2378
www.liebert.com

Emerson Liebert GXT2 6 & 10kVA

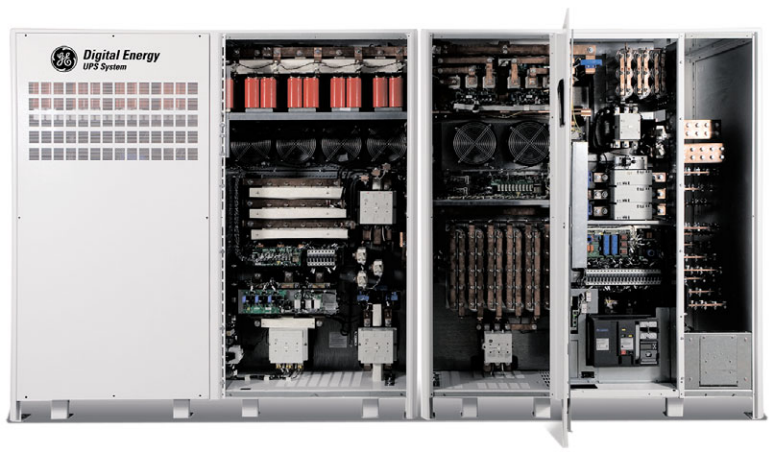
Emerson Network Power's Liebert GXT2 6kVA and 10kVA UPS systems provide online protection in the smallest cabinets in their capacity range. The UPS systems offer internal batteries, unlimited extended external batteries, and internal bypass capability, resulting in continuous uptime for the connected equipment. Multiple output configurations allow quick connection of protected loads. Designed for rackmount or tower setups, the Liebert GXT2 is available in a 6kVA 4U model and a 10kVA 6U model. Both models are available with output of 120/208V, 220V, 230V, and 240V. Dual-output-voltage units can provide 240/120VAC, 208/120VAC, 230/115VAC, 220/110VAC, or 200/100VAC. The 10kVA 208V Liebert GXT2 is available with a Parallel POD, enabling paralleling of two Liebert GXT2 modules to double capacity to 20kVA. A third unit may be added to configure the system for N+1 redundancy.

- Installs in either rack or tower configuration, and it automatically finds and matches line input frequencies of either 60 or 50Hz
- Conditions and guards against all forms of power irregularities
- Long battery life because of its ability to correct for frequency variations without switching to battery

Best For: Organizations looking for ways to extend the lifetime of the UPS battery.

Price: Starts at $4,000 for the 6kVA and $6,900 for the 10kVA

(800) 543-2378
www.liebert.com



General Electric 750kVA SG Series Digital Energy UPS

The General Electric 750kVA SG Series Digital Energy UPS system is an energy-efficient UPS system that boasts efficiency of more than 94% when operating at a typical 50% load. According to GE, when compared to other systems, standard data centers operating with 10 750kVA SG Series Digital Energy UPS systems will use between 60 and 100kW less power for operation and require 30 to 50kW less power for cooling. This reduces emissions and lowers operating costs.

- Space vector modulation resulting in better battery runtimes
- Redundant parallel architecture; UPSes are controlled in a peer-to-peer configuration
- Digital signal processing for improved response times
- Superior battery management with included battery testing features
- Intelligent energy management determines the most efficient mode of operation

Best For: Large data centers looking to cut back on emissions.

(800) 322-3616
www.geindustrial.com

PRODUCT SPOTLIGHT

Mobile Storage

CMS Products ABS-Secure

The ABS-Secure encrypted external hard drive features USB 2.0 connections with capacities ranging from 80 to 500GB. Designed for optimum portability and rugged durability, the ABS-Secure weighs just 7 ounces and features the CMS DataGuard shock-absorbing sleeve, which allows the drive to sustain a shock of 190Gs while operating and 1,000Gs when not operating. ABS-Secure features 256-bit AES encryption and CMS' CE Secure Full Disk Encryption Software as well as CMS' BounceBack Express Version 8.0 for backup and restore capabilities. ABS-Secure is powered by USB and spins at 5,400rpm.

- QuickRestore lets you restore individual files or folders
- Multi-destination backup lets you back up to any local or mapped network drive simultaneously
- Continuous data protection
- Three-year warranty

Best For: Sensitive data storage in rough environments.

Price: $173 (160GB); $187 (320GB); $207 (500GB)

(800) 327-5773 | www.cmsproducts.com

CMS Products BounceBack Ultimate

BounceBack Ultimate software lets you make a complete copy of your computer, including the operating system, formatting, applications, files, and settings, so you can recover everything on your computer in the event of an operating system or hardware malfunction. With the Instant PC Recovery feature, you can boot your computer from an external USB hard drive and use your applications and access your data as you normally would. To restore your system, you can use the One-Button Recovery feature, which will restore your system to either your previous hard drive or a new one, if necessary.

- Lets you restore your PC from an external hard drive
- QuickRestore lets you restore individual files and folders
- Backup options include continuous backup, scheduling, customized backups, and parallel backups
- 256-bit AES encryption
- Lets you sync data between multiple computers and devices

Best For: Those who need a simple, immediate restore solution in the event of a disaster.

Price: $69 for a download version;
$79 for a CD version

(800) 327-5773 | www.cmsproducts.com

CMS Products Vault OTG

The Vault OTG encrypted flash drive uses 256-bit AES encryption to protect against prying eyes in the event of loss or theft. To increase protection, the Vault OTG supports passwords of up to 64 characters. Available in capacities of 1GB, 2GB, 4GB, 8GB, or 16GB, the Vault OTG comes preconfigured for immediate use right out of the box with preloaded software and drag-and-drop functionality. To protect against threats from keyloggers, Vault OTG features a screen-displayed keyboard.

- Powered by USB
- Weighs just 1 ounce
- Includes a 19-inch lanyard
- When unplugged, it automatically locks, requiring the input of the password before it can be used again
- Leaves no trace of activity on your system

Best For: Anyone who needs to use public computers but has sensitive data.

Price: $29 (1GB); $49 (2GB); $79 (4GB); $99 (8GB); $149 (16GB)

(800) 327-5773 | www.cmsproducts.com

Iomega eGo Encrypt Portable Hard Drive, 320GB

The Iomega eGo Encrypt Portable Hard Drive is designed to let you take sensitive data with you anywhere. With a USB interface, hardware-based encryption (128-bit AES), and Iomega's Drop Guard Xtreme feature, the eGo Encrypt Portable Hard Drive protects your data from unauthorized access and accidental drops. The 320GB hard drive is silver and includes the Power Grip band. The eGo Encrypt Portable Hard Drive includes EMC Retrospect software and MozyHome Online backup (2GB free) service.

- Extra security with 128-bit AES hardware encryption
- Drop Guard Xtreme feature protects the drive when dropped up to 7 feet
- Designed to be compact at 5.5 x 3.63 x 1 inches and 0.6 pound
- Hardware-based encryption boosts performance
- Can automatically back up your drive with EMC Retrospect and MozyHome Ultimate Online software

Best For: Rugged applications that require durability and security.

Price: $109.99

(858) 314-7000 | go.iomega.com

Lexar JumpDrive Secure II Plus

Lexar JumpDrive Secure II Plus features a 10-bar capacity meter that displays available storage space at a glance, even when disconnected from a computer. JumpDrive Secure II Plus works across platforms, and its display functions are designed to give you complete flexibility and ease of use by working independently of the operating system. You can create multiple password-protected areas called Encrypted Vaults that automatically encrypt your data with on-the-fly 256-bit AES encryption. The File Shredder feature is designed to securely and thoroughly delete files so they can't be recovered, ensuring your data is secure.

- Display maintains reading when unplugged from computer
- Includes Secure II software for advanced data protection
- Drag-and-drop file encryption

Best For: Those who need a secure but portable data solution.

Price: $17.99 (2GB); $89.99 (16GB)

(510) 413-1200 | www.lexar.com

PRODUCT SPOTLIGHT

Compiled by Seth Colaner

SanDisk Cruzer Enterprise FIPS Secure USB With McAfee Malware Protection

SanDisk Cruzer Enterprise FIPS Secure USB with McAfee Malware Protection imposes mandatory, hardware-based encryption on all files and password protection to safeguard data stored on company-issued drives. Cruzer Enterprise USB devices are designed to help enterprises mitigate the risk of data loss by ensuring that data on the USB device remains inaccessible unless an encryption key or password is provided. Cruzer Enterprise with McAfee Malware Protection boosts security defenses with automatic, device-resident malware scanning. SanDisk Cruzer Enterprise secure USB drives feature FIPS 140-2 Level 2 certification for encryption.

- Ultra-fast transfer speeds and a simple user interface
- Plug-and-play USB security product
- FIPS 140-2 Level 2-certified
- Hardware-based 256-bit AES encryption
- Mandatory access control for all files (100% private partition) and strong password enforcement with a “lockdown” mode when a predetermined number of incorrect password attempts are made

Best For: Enterprises that require stringent security for their portable data.

Price: Starts at $65

(408) 801-1000 | www.sandisk.com

SanDisk Central Management & Control

SanDisk’s CMC (Central Management & Control) software provisions, secures, and manages USB flash drives that connect to a corporate network. The software is designed to provide lifecycle management of drives, including deployment throughout the organization, password recovery and renewal through the network, central backup and restore, central usage tracking, and remote termination of lost drives. CMC protects drives from unauthorized users if the drive is lost or stolen, and the backup feature of CMC makes it simple for the IT department to provision a new drive with the files from the missing drive.

- Centralized deployment and provisioning
- Application and licensing management
- RSA SecurID authentication integration
- Remote termination of any lost secure flash drive
- Auditing for regulatory compliance
- Seamless drive backup

Best For: Tracking the complete life cycle of flash drives.

(408) 801-1000 | www.sandisk.com

SanDisk®

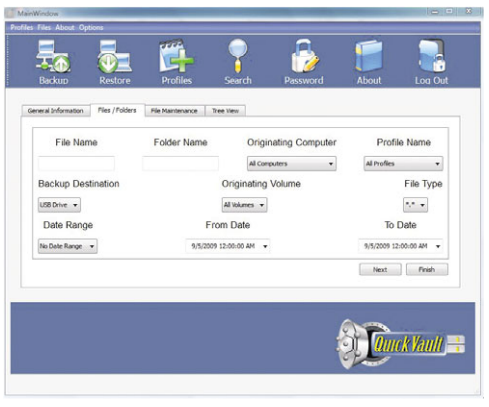
QuickVault PC File Vault & Mobile File Vault

PC File Vault is designed for the mobile business user and provides continuous PC backup to an FTP server. Users are able to back up data to a mobile device or their own FTP servers. PC File Vault also includes secure file sharing and complete audit trails (forensics) for data that is shared internally or externally. Mobile File Vault compresses and encrypts any data stored on a device’s microSD card. Both programs feature an administrative control panel that allows a system administrator to centrally monitor and track all backup and file sharing activities. Other features include Web-based security administration, thin client file access, digital file sharing, and online reporting.

- Enhanced security tools, including USB endpoint security, Web-based security, 256-bit AES encryption, and secure digital file sharing
- Backup options include scheduling and drag-and-drop functionality, the ability to back up to a single or multiple PCs, remote FTP backup, incremental file backup, and the ability to back up by file type or folder
- Features email backup and recovery
- Can lock the device if it’s lost or stolen

Best For: Disaster recovery protection for enterprises and mobile professionals.

(404) 316-9947 | www.PCFileVault.com; www.mobileFileVault.com



Olixir Mobile DataVault 3DX

The high-capacity Mobile DataVault 3DX is an easy-to-use, secure plug-and-play data storage tool. With shock-protection capability, the Mobile DataVault 3DX is designed to withstand nonoperational shocks up to 1,200Gs.

Mobile DataVault drives can be used interchangeably with Olixir’s USB 2.0, FireWire, Serial ATA, and eSATA cable interfaces. In addition, the Mobile DataVault drives can be used as a hot-swappable cartridge with Olixir’s chassis-based systems, which include 5.25-inch docking bays, desktop towers, and large-capacity 19-inch rackmount systems.

The Mobile DataVault drives, which support Macintosh OS 8.6 and higher, Windows 2000/XP/Vista, and Linux operating systems, are about the size of a VHS tape and compact enough to fit into the palm of your hand. They’re available in 320GB, 500GB, 750GB, 1TB, 1.5TB, and 2TB capacities.

- Ultra-rugged portable hard drives can be used standalone with cable interfaces or in Olixir’s chassis-based systems
- High-capacity Mobile DataVault 3DX drives provide up to 2TB of ruggedized storage
- Ability to survive nonoperational shocks of up to 1,200Gs
- Mobile DataVault 3DX drives can easily be repurposed, eliminating waste and maximizing ROI

Best For: Maximum storage capacity needs in rough environments.

Price: Starts at $350 (320GB with FireWire, eSATA, or USB 2.0 cable)

(800) 719-0595 | www.olixir.com

IronKey S200

The IronKey S200 is a physically and cryptographically secure USB flash drive with FIPS 140-2 Level 3 validation. Used by government and enterprise customers, the S200 features hardened physical security, the latest Cryptochip technology, active anti-malware, and enhanced management capabilities.

- Tamper-resistant and tamper-evident rugged metal case
- Anti-malware capabilities in hardware designed to provide a layer of protection from malware and prevent its spread onto networks
- Includes extended-life flash memory capable of running high-bandwidth applications such as data backups, virtual machines, or bootable mobile desktops
- Enterprise Management Cloud Service for enforcing security policies, providing security and anti-malware updates, and tracking and auditing hundreds of thousands of devices

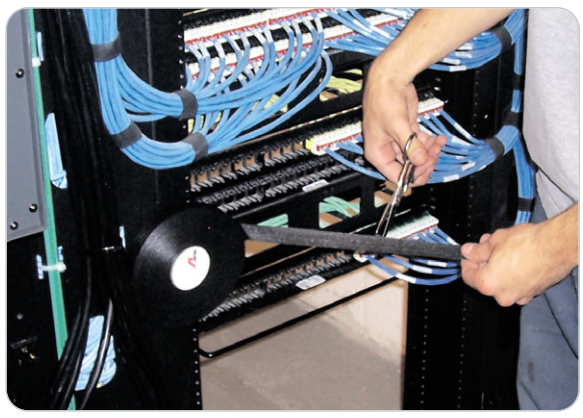
Best For: Business personnel who need a portable device to store ultra-sensitive information.

Price: Starts at $79

(650) 492-4055 | www.ironkey.com

PRODUCT SPOTLIGHT

Underfloor Cable Management



Cable Ties & More Qwik Tie Tape With Dispenser

Featuring a uniquely designed core, Cable Ties & More's Velcro Qwik Ties offer a convenient and cost-effective method to bundle wires and cables. The Qwik Tie's core is designed to adhere to ladders, the sides of cabinets, and other materials to provide workers easy tape dispensing. The tape consists of a hook material on one side and a loop on the other that allows for wrapping wires, cords, and cables in a quick and efficient manner. The Velcro Qwik Ties can be opened and closed as many times as needed.

- Easy to use: cut desired length and apply
- Economical and cost-effective cable management
- Ideal for all application types
- 25-yard roll sizes
- Black color
- Operating range of 0 to 220 degrees Fahrenheit

Best For: Fiber-optic cord and cable management.

Price: $18.75

(877) 284-7760
cabletiesandmore.com

Cable Ties & More Large Capacity Hinged Cable Raceway

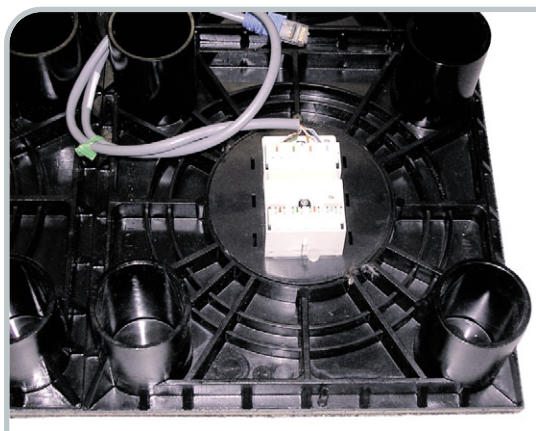
Surface cable raceway systems, such as Cable Ties & More's nonmetallic Hinged Cable Raceway wiring enclosure system, provide an attractive method for concealing wires in various settings and are particularly useful when drilling into walls or ceilings isn't an option. The company's line of extruded raceways includes an assortment of accessories, including preapplied adhesive backing, fittings, and interior and exterior corners, so Cable Ties & More can customize to meet your specific wire management needs. The company's 1125 series of latching raceways are designed to accommodate larger-diameter cables. All Cable Ties & More surface raceway parts are constructed of lightweight but durable UL 94-VO-compliant, flame-resistant PVC that users can cover with Latex-based paint.

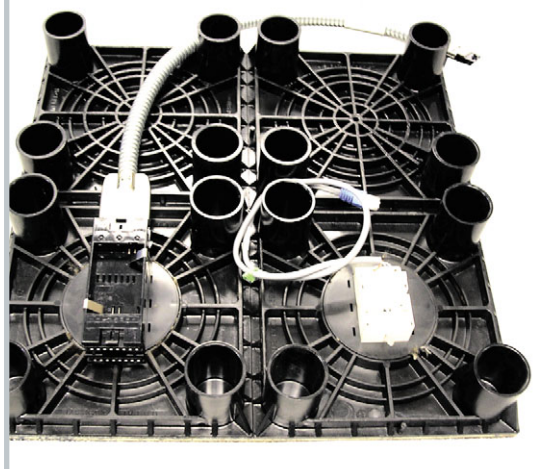
- Triangular corner raceway blends into wall and ceiling junctions for a clean, finished appearance
- Fast and easy installation via hinged-cover design
- UL VO-94-compliant, flame-resistant PVC construction
- 0.75 x 1.5 inches, 5-foot section
- Available accessories include tees, inside corners, outside corners, couplings, and elbows
- White color

Best For: Users who need to hide wires in various locations, particularly areas where drilling into walls or ceilings isn't an option.

Price: $9.97

(877) 284-7760
cabletiesandmore.com





CableOrganizer.com Powerflor Raised Floor Cable Management System

CableOrganizer.com's Powerflor is a complete low-profile, raised-floor cable management system that includes electrical power outlets and cabling, voice and data outlets and cabling, and modular carpeted chaseway floor. The conventional raised floor provides a horizontal space in which other building elements, such as wiring and air delivery, can be placed or used. The raised-floor approach also typically provides an additional contracting layer for the floor only.

- Modular design cuts installation time and costs and simplifies future alterations
- Standard 18- x 18- x 3-inch panels constructed of impact-modified polycarbonate material tested to support 41,000 pounds per square foot and includes 2 inches of height for cabling underneath
- Tool-less disconnections and reconnections of outlets
- Carpeted panels feature Volara foam underlay to prevent lateral movement and reduce noise
- Uses PVC-free materials
- Up to four duplex-power or data-outlet grommets per panel to accommodate any floor plan
- Complete flooring systems with prewired outlets and ADA-compliant entrance ramps available

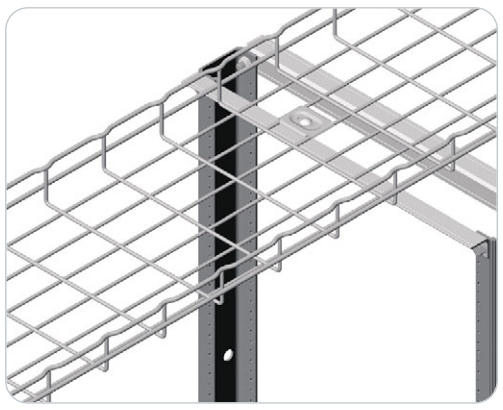
Best For: Call centers, computer training rooms, IT lab areas, schools, offices, conference rooms and centers, and areas where computer use is extensive and/or the churn rate is high.

Price: $39.99 per 18- x 18-inch standard panel with foam; $95 per 18- x 18-inch standard panel with foam with duplex power or data outlet

(866) 222-0030
cableorganizer.com

PRODUCT SPOTLIGHT

Compiled by Blaine Flamig



Chatsworth Products OnTrac Wire Mesh Cable Tray System

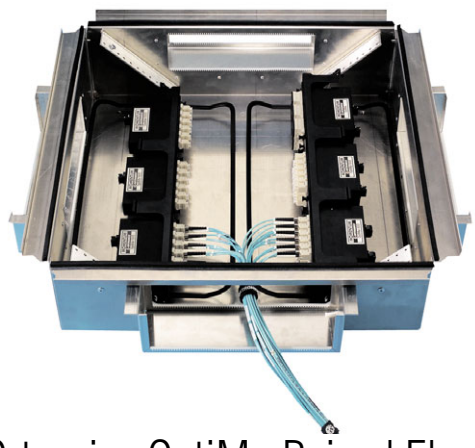
Chatsworth Products' OnTrac Wire Mesh Cable Tray System provides users a point-to-point pathway solution that both supports and distributes large quantities of cables to equipment cabinets and racks. In addition to being highly flexible, workers can position the OnTrac system under access floors or above drop ceilings, against walls, or on top of racks and cabinets. Additionally, the company's tray system can be cut and shaped to create transitions with smooth curves around building structures and obstacles.

- Supports large network cable loads with an easy-to-use pathway solution
- Ships in multiple widths and depths to match various requirements
- An open-top design enables easier future alterations
- Wide range of accessories available, including splices, clamps, and brackets
- UL-classified as an equipment ground conductor

Best For: Equipment rooms, office spaces, and data centers of any size.

Price: $79.90 to $190.40

(800) 834-4969
www.chatsworth.com



Ortronics OptiMo Raised Floor Fiber Patch Panels

Ortronics OptiMo raised floor fiber patch panels let data center managers and designers use underutilized installation space beneath the raised floor structure to provide greater flexibility in structured cabling design and maximize premium data center floor space. Designed specifically for installation in raised-floor enclosures that are part of the cabling pathways, the OptiMo raised floor fiber patch panels address the special bend radius and depth requirements of fiber optic cabling systems.

- Designed for under floor installation with integrated cable management
- 19 inches wide; 1U- or 2U-high models available
- Designed for installation within 2- x 2-foot underfloor box with angled mounting rails
- Removable, reusable labeling cards
- 1U patch panel has three 1U openings to accommodate Ortronics standard 615 Series adapter panels and/or 1U Momentum cassettes
- 2U patch panel has six 1U openings to accommodate Ortronics standard 615 Series adapter panels and/or 1U and 2U Momentum cassettes

Best For: Data centers where space is limited.

(800) 934-5432
www.ortronics.com

PDU Cables Air Guard Cable Seals Product Line

PDU Cables is the exclusive supplier of the Air Guard Cable Seal product line, which includes products that seal access holes required for routing cables through a data center's flooring. The Air Guard Cable Seal product family provides companies immediate energy savings because of the product's ability to significantly minimize cool air loss while improving the static pressure to cool data center equipment. This ability assists in preventing a company's expensive electrical equipment from overheating.

- Excellent seal around cables provides effective, economical means to eliminate bypass air though cable cutouts
- Reduces air loss in plenum-cooled floors
- Increases under floor static pressure
- Extends the life of cooling equipment
- Flexible and simple cable routing via removal of floor tiles without disconnecting equipment

Best For: Sealing any size of cable opening.

(866) 631-4238
www.pducables.com

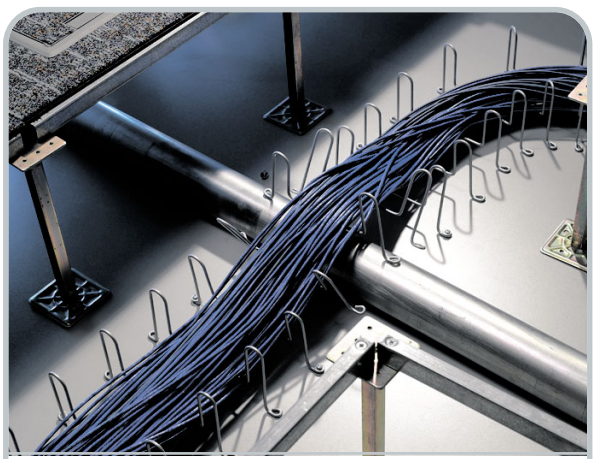
Snake Tray Snake Canyon Modular Cable Tray System

Snake Tray's Snake Canyon Modular Cable Tray System is designed so the system can immediately integrate with the structural elements already in place within a company's access floor, creating an underfloor cable management approach that drastically reduces installation costs.

- One-piece drop-in cable tray module
- Models are available for all floor types
- No additional hardware is required
- Trays are movable and reusable
- Tray design ensures proper airflow
- Power module accessories available
- UL-classified
- Low-cost shipping and easy handling

Best For: Government, retail, education, financial, industrial, and other industries needing cable management.

(800) 308-6788
www.snaketray.com



Snake Tray 101

The Snake Tray 101 system is a hand-bendable approach that installers can mount directly to the floor or suspend from the pedestals on an access floor. In addition to bending around obstacles in the floor, the trays install quickly with built-in mounting hardware.

- No onsite fabrication required
- Trays attach to each other using a single connector
- Easily mounts to the floor using built-in mounting rings
- Open-architecture design enables cables to be loaded from any direction
- UL-listed
- Low-cost shipping and easy handling

Best For: Government, retail, education, financial, industrial, and other industries needing cable management.

(800) 308-6788
www.snaketray.com

Upsite Technologies Koldlok Mini

The Koldlok Mini Raised Floor Grommets seal small openings in new and existing data centers to optimize existing cooling equipment and manage heat loads. Measuring 4 x 6 inches, the patent-pending thermal management Grommets give installers a handy way to split power and data cabling to minimize interference and also move floor tiles without capturing cables. The Grommets improve existing cooling unit capacity, reduce equipment hot spots, and lower infrastructure costs. Each Grommet has 13,200 opposing, angled, and intermeshed nylon filaments that block up to 98% of bypass airflow.

- Filaments and frame meet UL V0 standards
- Sits flush with raised-floor or other panel surfaces
- Available with and without static dissipation
- Static-dissipation feature integrates with raised-floor static grounding system to provide 1-gigaohm resistance

Best For: Sealing small cable openings in new or existing data centers and for cost-effectively splitting power and data cabling.

(505) 982-7800
www.upsitetechnologies.com

CASE STUDY

Larger & Faster RAID Storage

JMR FibreStream RAID Provides High-Performance Storage For Video Production Firm

by Sue Hildreth

• • •

As computer graphics become more sophisticated, the size of the graphics files gets larger, so they take up ever greater amounts of storage space. Miller Wishengrad Post, a boutique editing company in Santa Monica, Calif., that works on commercials, movies, and other video projects, has experienced this surge in storage demands first hand—especially recently, as new high-definition film has moved to the mainstream.

"When we worked in standard definition, a drive that was 100GB was fine. But now we're working with high definition, and that takes up a lot more space," says Sean Leute, an editor at MWP (Miller Wishengrad Post). "We've seen an exponential increase in storage in the last few years."

Collaborative Editing

MWP's four editors used local SCSI storage drives connected to their Apple MacPro workstations. Although that setup worked just fine for individual editing tasks, it did not allow for collaborative editing of large projects, such as commercials or films where several editors may need to work on different sections of the clip. Editors could only work one at a time on a project, sending the large file across the office network or accessing it via a file sharing utility. That clogged the office network and meant projects took longer to complete. It also led to duplication of large files, which consumed precious megabytes of storage space.

JMR Electronics BlueStor FibreStream

A 16-bay Fibre Channel-based RAID array configurable to RAID levels 0, 1, 4, 5, 6, 10, 40, 50, or 60. Each bay can hold 3Gbps SAS or SATA-2 disks, for a total storage capacity of 32TB.

"We used to go in and delete the media, either because we didn't need that media anymore or needed the space. . . . Now, with ample storage, we don't have to do that. We have partitions that we haven't dedicated to any project yet, empty and ready to go," says Sean Leute, an editor at Miller Wishengrad Post.

(818) 993-4801 | www.jmr.com

JMR Innovators in Storage Technologies

The company needed a cost-effective system that could scale to meet its growing storage needs and would allow editors at individual workstations to edit different parts of the same clip at the same time, rather than the usual method of one person editing a part then sending the entire file on to the next editor. MWP also wanted a system that would provide robust performance in handling streaming high-definition video, a feat that is difficult for many storage systems.

Early this year, JMR Electronics, a reseller of enterprise computer and storage equipment (www.jmr.com), approached MWP with its BlueStor FibreStream RAID storage system. The FibreStream array comes with 16 hot-swappable 3.5-inch disk drive canisters for 3Gb SAS or SATA-2 disk drives and can hold up to 32TB using 2TB SATA-2 drives, although MWP is currently using 1TB SAS drives. Should the number of drive bays prove insufficient down the road, MWP can expand by adding a BlueStor SAS Expander, which adds 16 hot-swappable SAS/SATA bays. According to Leute, the system provides MWP with twice the storage capacity for nearly half the cost of a competing product they had considered.

FibreStream is also a fast performer, says Leute. It's capable of up to 1,300MBps and is designed for data-intensive applications such as video post-production editing. To test its performance with high-definition video, MWP had it stream uncompressed high-definition 10-bit clips. "If there are problems with speed on your hard drive, it would show with stuttering issues or just not keep up. We were able to play the high-definition files with all effects; it pushed through the media with no problem," says Leute.

Production Mode

MWP kept the FibreStream product in trial mode for 30 days to test its performance and then began moving it into production mode at the end of March.

CASE STUDY

Easy, Affordable Backups

SEPATON's VTL Solution Gets High Marks From The University Of New Hampshire

by Robyn Weisman

• • •

Founded in 1866, the University of New Hampshire is the largest university in the state and one of only nine land, sea, and space grant institutions in the United States. Its main campus in Durham, N.H., has more than 14,000 undergraduate and graduate students, along with another 2,000 or so faculty, administrators, and other staff. And Bob Rader, storage and backup manager for UNH, estimates the IT department for the campus is made up of about 150 employees.

UNH's IT department is divided into two parts: academic desktop support for students and faculty and the administrative side, which handles backend business applications and general enterprise computing. Until recently, each sub-department had its own backup environment, and about two years ago, the university decided to consolidate the two backup environments.

After looking at data deduplication solutions from several vendors, UNH chose SEPATON's S2100-ES2 VTL (Virtual Tape Library) and DeltaStor Deduplication Software (www.sepaton.com).

"I never expect technology to work as expected. To me, it's hope for the best, plan for the worst," Rader notes. "But SEPATON [works] as advertised, which is not necessarily as common a thing in IT as you would expect."

Not Cobbling A Solution Together

According to Rader, UNH decided to buy all new backup servers and devices and consolidate the two divisions using a disk-based VTL solution. "We could have stuck with tapes, but the only way to deal with slow backup clients is to multiplex, [and] while all these backups are writing and interleaving to a tape, it's a slow process to restore the file from all those interleaving backups," Rader says. "We have some very large Oracle databases, some as big as a half-terabyte, and our RTOs (recovery time objectives) don't get met if the storage performance is impacted."

For example, if the tape drives are unable to push through data fast enough, the tape will start "shoe-shining"—stopping and starting in a similar motion to someone shining a pair of loafers. "Not only does that slow the backup process down, it can damage the drive and tape when it happens too much," Rader says.

Rader's other worry in consolidating the two backup environments was overall performance and throughput. He explains that each environment had a lot of clients, and when each was running at full bore, a lot of backups were taking place concurrently, sucking up resources. UNH needed a solution that would effectively and efficiently aggregate the backups. "We wanted something that would solve our No. 1 problem of the sole backup client and the shoe-shining, which led us to disk backup solutions," Rader says.

Compressing The Cost

Like any public institution, particularly in this economic climate, UNH had a limited budget for making this migration to a VTL deduplication solution. Just on a gigabyte capacity basis, disk-based storage is more expensive than tape-based storage, but Rader felt that if the university's network could obtain even a relatively conservative deduping ratio of about six to one, the disk-based solution would be competitive with the previous tape infrastructure.

Ideally, Rader wanted to find a disk-based VTL solution that could scale with UNH's needs. "We found SEPATON's solution to be very scalable both in terms of capacity and performance," Rader says. "The number of CPUs and engines that drive it go from one to as many as eight, so

SEPATON S2100-ES2 Virtual Tape Library & DeltaStor Deduplication Software

An enterprise VTL solution that provides users with optimized backup and recovery capabilities, and is three times as fast as those of competing vendors. Its modular scalability, advanced thin provisioning, and ability to compress data saves on power and physical space while bringing users top-flight enterprise performance.

"I never expect technology to work as expected. To me, it's hope for the best, plan for the worst. But SEPATON [works] as advertised, which is not necessarily as common a thing in IT as you would expect," says Bob Rader, storage and backup manager for the University of New Hampshire.

(866) 737-2866 | www.sepaton.com

> "After we'd made sure it worked, we moved everything to the FibreStream, turned off our old SCSI drives, and went for it."
>
> *-Miller Wishengrad Post's Sean Leute*

To make the move from local storage to the SAN-based RAID array, MWP connected the four editing workstations to the FibreStream using Fibre Channel cable. The company then began copying all of the media files from the SCSI drives to SAS drives. That took about a day, says Leute, after which MWP disconnected the local drives and began working off the SAN.

"The only way to really test a system like this is to use it every day. After we'd made sure it worked, we moved everything to the FibreStream, turned off our old SCSI drives, and went for it," says Leute.

The drives are partitioned for each user, and users have read/write ability for their own partitions, but read-only access to other partitions. With the new FibreStream system and SAN, MWP was able to take advantage of the Avid workflow engine in the Avid video-editing software the company uses. The workflow engine enables editors to work on pieces of the same file over the SAN. It keeps track of the edited pieces, which are typically stored on the individual editor's partition, and then reassembles those pieces and streams the finished clip in its entirety when played.

Another major advantage of having a larger storage system is that editors don't have to make painful decisions about which older clips to delete to make room for new work.

"We used to go in and delete the media, either because we didn't need that media anymore or needed the space. But then we might get a call three months later saying the customer wants to do something with it," says Leute. "Then we'd have to go through the process of redigitizing things and getting the project back together. Now with ample storage, we don't have to do that. We have partitions that we haven't dedicated to any project yet, empty and ready to go."

If Miller Wishengrad Post eventually does need more space, however, it can add up to 16 additional bays by daisy-chaining a BlueStor JBOD SAS Expander. One addition that MWP plans to make at some point is an LTO tape archive or, perhaps, some sort of tapeless archival system.

"We have masters going back to the 1990s," notes Leute. "But lots of projects are not shot on tape anymore, but on files like XDCAM [a tapeless video disk that can hold up to 50GB] or RED [RED ONE, a technology that uses flash or hard disk], so we're looking at having a more permanent archive system for that." P

we knew we could start by buying something small that just met our needs and grow over time, and it would still be one single logical unit rather than having to buy each one as a separate VTL and having all these islands of backup storage."

To start off, UNH bought SEPATON's smallest unit, which is about 30TB and fills about 20U of a rack. Rader notes, however, that the university can build out this unit to one that takes up more than three full racks in size with many more disks and processing power to leverage. "We didn't have to budget a huge amount of money up front, and we know we can budget a little each year or every other year to make this thing grow," he says.

Once UNH migrated all its data to the SEPATON solution and ran through the retention cycles of all of its backups, Rader found that its deduping ratios easily met his 6:1 criteria and brought the costs down to be equitable to tapes. "It brought it down enough that we think we're going to be able to postpone having to expand our VTL capacity-wise for at least half a year and probably a year," says Rader. "We had budgeted $20,000 this year for our first capacity upgrade, but based on how we're using it and how the data is being compressed, we won't have to until the next budget year."

Meeting & Beating Expectations

According to Rader, SEPATON's sales and technical support have been top-notch. "It may be because SEPATON is a smaller company, but the guy I talk to is always the same guy, and he was very knowledgeable and helpful during the configuration and implementation phase," he says.

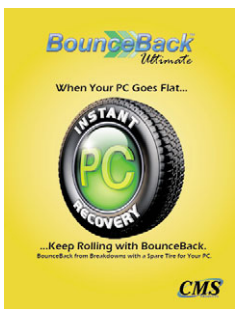
Rader found the implementation process was a smooth one. "We didn't expect any snags, but the VTL was installed, up, and running in less than half a day," he says, adding that the whole process was smooth, from out of the box to installation to implementation.

For his part, Rader has found SEPATON's solution to be elegant and simple to use. And he can't say enough about its compression capabilities, which were even better than he had hoped. "The unknown in this whole equation with deduping is how much your data will get shrunk, and you never know until you actually run it through an entire backup cycle of everything," he says.

Additional Benefits

In addition to being able to postpone the capacity upgrade, Rader says that SEPATON's solution also provides the ability to create virtual tape drives. "We've been able to consolidate our backup and are now running twice as much stuff as we used to," he says. "We're able to run a lot more concurrent backups than we were able to in our old deployments."

Overall, Rader calls SEPATON's VTL and data deduplication solution a big win for UNH. "With a lot of slow clients, it's nice to be able to create a whole bunch of virtual tape drives [and] run a lot of backups together, and it doesn't matter how slow any given one is because in aggregate, you're still pushing a lot of data at the VTLs and getting the backups done," he says. P



Simple & Quick Backup & Recovery

CMS Products BounceBack Ultimate

by Seth Colaner

• • •

Every data center employee knows the necessity of backup and recovery solutions. CMS Products' BounceBack Ultimate is designed to be a "digital spare tire" for PCs, allowing users to back up and restore the entire contents of a PC, including applications, data, personal settings, operating system, partitioning, and formatting.

Features include Instant PC Recovery, which lets users start up a PC from an external USB hard drive in case the operating system or hardware malfunctions, and instant One-Button Recovery, which is a simple and direct way of restoring a PC hard drive without the need for reinstalling anything. The QuickRestore function also lets users quickly restore specific files and folders.

Other features include CDP (Continuous Data Protection), a function of BounceBack Ultimate that continuously keeps new or modified files up-to-date; the ability to let Bounce-Back Ultimate run its processes in the background so users can continue to work while the program takes care of business; and easy-to-configure AES 256-bit en-cryption to secure your data from prying eyes.

BounceBack Ultimate also lets users back up to multiple media, such as an external hard drive or network drive, simultaneously so users can have multiple concurrent backups. With synchronization capabilities enabled, users can save a backup of their projects on a backup drive and use the drive on other computers. When the drive is again connected to the original computer, BounceBack Ultimate automatically syncs the changes, ensuring you're always working with the most up-to-date files. Users can also schedule backups and create backup sets.

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FEATURED COMPANY

Smart KVM & Power Solutions

Raritan Helps SMEs Manage Power, Access Systems Remotely & Control Costs

by Robyn Weisman

• • •

When data center management solutions provider Raritan began in CEO Ching-I Hsu's basement in 1985, it focused on selling PC clones. Back then, the demand for low-cost IBM clone PCs was greater than the supply, and so Hsu's company built these PCs primarily for local customers.

As PCs proliferated, computer room administrators found it overwhelming to manage multiple computers, each with their own peripherals. "PC builders realized that to test 20 computers, you didn't need 20 monitors, 20 keyboards, or 20 mice. You just needed one," explains Henry Hsu, director of power management accounts at Raritan (www.raritan.com). "Yet there was no tool at the time that allowed you to multiplex that one connection to many computers."

So Raritan built a tool that became a precursor to what is now known as the KVM switch. "To be fair, other people were doing similar things at the same time, but we are known as the father of the KVM switch," says Hsu.

Knowing The SME Space

Over the past 10 years in particular, the use of KVM switches has evolved from handling local computers in a computer room to managing networks of servers both remotely and locally. "The value proposition changed to being more productive globally, enabling remote access to servers so that a single human being can manage a lot of servers in more productive fashion," Hsu says.

Because of Raritan's roots, all of the company's solutions are ingrained in the data center space. "We pride ourselves on how much we know about the IT manager's job, so the value we're trying to add is to make data centers more efficient and to reduce costs," says Hsu. "We know what it takes to run a data center."

And although Raritan's customers range from mom-and-pop businesses to Fortune 500 companies, Raritan itself is a classic SME with about 500 employees spread in offices around the world. "The ability for our own people to be productive around the clock, wherever they are located, against hundreds of machines has to be evident," says Hsu.

Positioned To Lower Data Center Costs

Hsu points out that although the cost of computing has been dramatically reduced, the actual cost of running a data center has skyrocketed. According to Hsu, two major costs IT managers face, regardless of company size, are operational costs associated with electricity and infrastructure and human expenses—in other words, the employees who manage the network itself.

Raritan
Know more. Manage smarter.™

"We're really focused on how we can reduce both of these costs. How many people and how much effort does it take to keep a data center running?" Hsu says. Raritan's KVM offerings include a wide array of analog KVM switches, KVM over IP consoles and PCI cards, and a one-port, one-user KVM switch the size of the average data center manager's hand. All of these products maximize human resources so that IT staff can administer their networks onsite or half a world away.

In addition, the increase in data center energy use has been exponential, particularly over the past couple of years, Hsu says. "Some of the big companies thought we could solve this problem, so about three or four years ago, we put our R&D expenditures into this issue. This research led to hardware and software solutions that can be used either together or as standalone solutions depending on an organization's needs.

"The reason we have a compelling advantage over existing players who deliver power or cooling solutions is that we understand how software should be delivered and how data center hardware works," says Hsu. "It's just by happy coincidence in the way KVM switching and remote access devices came to be that Raritan has both this keen understanding of hardware and [the software] running on servers themselves."

Raritan Featured Products

Product	Description
Dominion KX II	A broad portfolio of KVM over IP switches that provide secure BIOS-level access and control of up to 64 multiplatform servers and serial-based devices both at the rack and remotely.
Dominion PX Intelligent Power Management Solution	A series of smart PDU appliances that offer remote outlet-level management and monitoring displayed at the strip itself via an LED display. Offers 256-bit AES encryption, remote power cycling, and an easy-to-use GUI interface, among other features.
MasterConsole IP	A fully featured, easy-to-use KVM switch for the small to midsized enterprise. Provides BIOS-level control of up to eight or 16 servers from one keyboard, monitor, and mouse. Comes with the same security features as Raritan's enterprise-class KVMs.
Power IQ Data Center Energy Management Software	Energy management software with powerful automation capabilities to provide energy analytics to improve energy efficiencies and optimize data center power through a Web browser interface. Can be used on non-Raritan PDUs and inline meters.
T1700 & T1900 LCD Console Drawers	Flexible 1U devices that offer video, keyboard, and touchpad functionality, allowing administrators to manage a rack, or multiple racks of servers, from a single workstation.

Raritan
(800) 724-8090
www.raritan.com

Raritan specializes in intelligent KVM and PDU devices and software designed for enterprises of all sizes.

The company aims to help enterprises reduce operational costs and infrastructure and personnel expenses through smart power and device management.

"We pride ourselves on how much we know about the IT manager's job, so the value we're trying to add is to make data centers more efficient and to reduce costs," says Henry Hsu, director of power management accounts at Raritan.

Don't Call Them Power Strips

When Raritan started tackling the energy management problem, it began by analyzing the ways in which a company's data center can optimize energy utilization, save money, and ultimately prove to the finance department how this savings was brought about. According to Hsu, Raritan's rack-intelligent PDUs all contain a high-accuracy measurement tool as well as a built-in computer that allows data centers to identify the amount of energy each server is consuming, rather than generalizing about what a given rack of servers is using.

Raritan PDUs can also perform a number of other useful, often automated, tasks, such as automatic shutdown and reboot and power cycling for individual servers. "This enables users to see not only which servers are wasting money and energy but also allows them to automate power savings," Hsu says. "For example, [an organization] might learn that on weekends and evenings, its Web site traffic requires only about 1/10 the amount of power it needs during work hours, which allows them to turn off, say, two of its three Web servers without impacting its business."

Hsu also points out that this process, like many others, can be automated to a granular level. "The decision can pay for the PDUs themselves," says Hsu. And given that Raritan offers more than 150 SKUs of PDUs, organizations of all sizes can find the right PDU solution for their enterprises.

Scalable Solutions

Raritan's software Power IQ leverages the raw capabilities of Raritan's PDU portfolio by offering fine-tuned automation. However, Raritan understands that not everybody is going to chuck their current power strip or PDU hardware, whatever its advantages may be. Therefore, Raritan designed Power IQ to support a number of third-party PDUs as well as inline meters. And Power IQ manages all these different products through a simple browser interface.

"We try to make everything as modular as possible depending on the customer's budget, so both our KVM and PDU solutions offer the same high-end capabilities regardless of price," says Hsu. "And during the last three years, some of the highest-end capabilities have come down dramatically in price, so *Processor* readers who might have previously thought that remote KVM capabilities, for example, were out of their price range, well, they aren't anymore." P

FEATURE PACKAGE

Getting Ready For The Recovery

What should data center and IT managers be doing now to be ready when IT spending goes back on the upswing? We highlight the technologies and trends you need to know.

Storage Spending On The Rebound | 23

■ Recession-tightened IT budgets have forced decision makers to rein in spending on storage. Here's a look at some target areas to consider both now and when your storage budget begins to recover.

A Surge In Server Spending | 24

■ Lean budgets may be looking less anorexic these days, and as the recovery gears up, IT managers will probably get the chance to implement more servers and hardware in the data center than they have in the past couple years.

Building On The Recovery | 24

■ Data center managers looking to build or renovate data centers need to stay on top of the right products, technologies, and services they will need to stay ahead of the curve.

Staffing Plans For Better Times | 26

■ The economy's rebound should eventually positively affect IT employment. When that does happen, getting the right staff in place will prove all that more challenging as the talent pool shrinks.

Storage Spending On The Rebound

Prepare Your Storage Environment For The Economic Recovery

by Carmi Levy

• • •

Recession-tightened IT budgets have forced decision makers to rein in spending virtually everywhere. Despite squeezed technology budgets, the need for storage has never been greater. Exploding use of rich data types and collaborative work environments has driven equally massive needs in storing and managing the resulting fast-growing information repositories. This has left existing, resource-starved storage solutions struggling to keep up. Luckily, when it comes to restricted budgets and economic downturns, what goes down is eventually going to come back up. Here's a look at some target areas to consider both now and when your storage budget begins to recover.

Things Have Changed

Long before the economy eventually begins to recover, IT shops must solidify plans for increasing the capability and cost-effectiveness of their storage infrastructure—or risk being caught short. Thankfully, the landscape has rapidly changed for the better since the economy hit the skids. IT today has a wide array of new technologies to deliver improved storage capability more cost-effectively than ever.

"No matter the economy or its outlook, information continues to grow at about 60% every year," says Scott Delandy, senior product manager at storage vendor EMC (www.emc.com). "Consolidation, virtualization, automated tiering, and cloud-based services are the 'big impact' priority projects. These projects not only reduce costs, but also transform IT from a collection of technologies that run applications to an efficient and adaptable infrastructure that is delivered and consumed as a service."

Pay As You Grow

The on-demand pay-as-you-grow model is an attractive option for SMEs, as it allows organizations to buy capacity as they need it. Traditional up-front capital investments in fixed infrastructure are avoided, and IT managers can also sidestep the traditional decision between linear scalability of capacity and performance. Scale-out infrastructure allows organizations to have both simultaneously.

"By investing in scale-out architectures, data center managers can protect their storage investments and IT spend against unpredictable macroeconomic shifts or changes within their own business," says Sam Grocott, the senior director of product management at Isilon (www.isilon.com). "As scale-out storage provides a 'future-proofed' architecture capable of scaling on demand to meet changing business needs while minimizing the initial investment, it is an ideal use of IT budget."

Virtual Storage, Real Benefits

This scalability will be crucial as virtualization gradually paves over existing data center architectures. According to Gartner, 15% of all server workloads are currently virtualized. The research firm expects this to skyrocket to 80% by 2013. Grocott says this shift to virtualization will have dramatic implications for data center managers, who will need to invest in storage technologies purpose-built to support highly virtualized environments. Current solutions just won't cut it.

"Even today, virtualization is overwhelming traditional SAN and NAS systems," says Grocott, who explains that current systems are incapable of providing a cost-effective, scalable environment because they are built to serve small amounts of data at fast speeds with specific, isolated workloads. "In virtualized environments, the limitations of traditional storage disproportionately increase costs as an environment scales, hindering performance and causing increased management burden."

Extending this thinking one step further to cloud-enabled storage will further stretch the bounds of existing storage capabilities. Allen Allison, vice president of managed services for NaviSite, says these solutions can interoperate with a variety of applications, solutions, and technologies.

"These storage solutions will focus on offering a lower total cost of ownership, will enable ease of management, and will be scalable beyond existing silo-based storage platforms," says Allison, who adds that now is an ideal time for data center managers to start scouting storage solutions from smaller, niche storage providers as well as larger, more traditional storage vendors to ensure the targeted solutions closely match their enterprises' needs.

Look Beyond Hardware

Positioning storage capability for the recovery involves more than products, however. Taking the time to better understand the current state of storage is a critical step that ensures you don't simply throw new hardware at the same old problem once the budgets are unfrozen.

"Planning storage-related spending should begin with a thorough and thoughtful analysis of current assets, usage, and needs," says Stephen Harding, director of marketing for Tek-Tools Software (www.tek-tools.com), a storage resource management vendor. "Consistently, we see storage and storage-related assets being used in inefficient and costly ways. Our average customers recover 30% of wasted and over-allocated storage capacity with simple, automated data classification strategies supported by capacity and utilization analysis."

Harding adds that historical trending coupled with automated forecasting can also drive more realistic planning for future needs and investments. EMC's Delandy agrees, saying that automated, self-optimized, and on-demand scalable technologies will make storage seemingly invisible. These technologies could include active archiving to automatically move information to the right tier at the right time, data duplication to eliminate redundancy and speed processing, and virtual provisioning to simplify storage allocation and allocate capacity only when it's needed. To get the most out of these investments, IT must look at the big picture.

"Individually, these are all good technologies," says Delandy. "But they become 'game changers' to managing information when they are assembled into an integrated solution." P

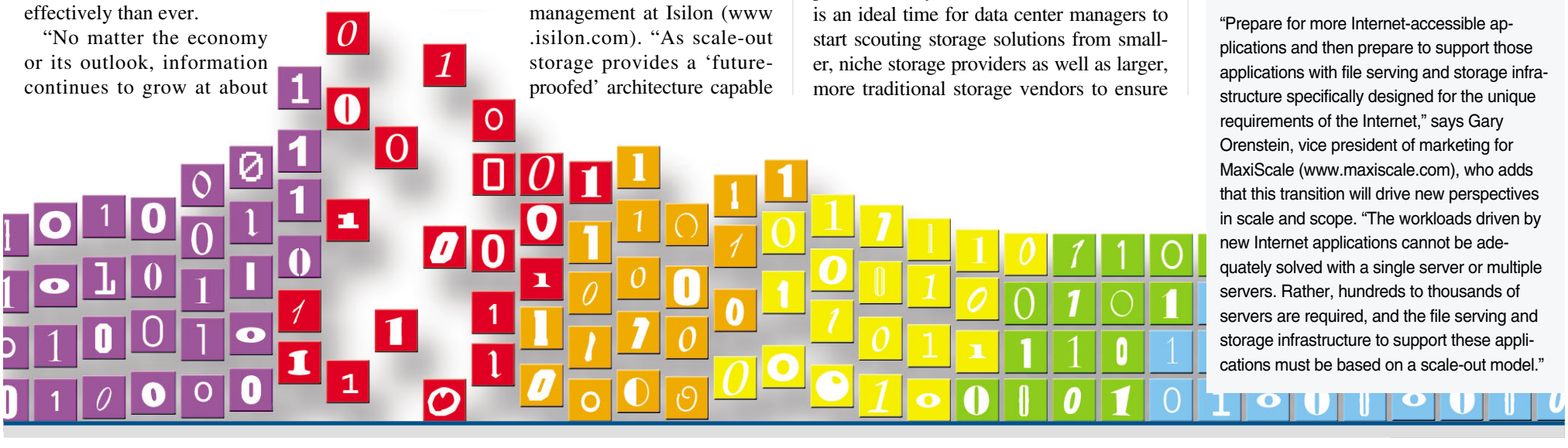
Key Points

- Virtualization is driving significant change in how storage is planned and provisioned.
- Pay-as-you-grow offerings and cloud storage allow for the scalability that enterprises need as data stores increase and their budgets slowly creep back up.
- Planning matters just as much as product. Organizations that take the time to understand current usage patterns and needs better position themselves for more effective future storage capability.

Top Technology: Cloud Storage

The ongoing growth in interest and investment in cloud-based applications and related infrastructure is driving managers to rethink how they plan and provision future storage purchasing and implementation.

"Prepare for more Internet-accessible applications and then prepare to support those applications with file serving and storage infrastructure specifically designed for the unique requirements of the Internet," says Gary Orenstein, vice president of marketing for MaxiScale (www.maxiscale.com), who adds that this transition will drive new perspectives in scale and scope. "The workloads driven by new Internet applications cannot be adequately solved with a single server or multiple servers. Rather, hundreds to thousands of servers are required, and the file serving and storage infrastructure to support these applications must be based on a scale-out model."



FEATURE PACKAGE

A Surge In Server Spending

Servers & Other Hardware Are Prime Targets For Budget Dollars As The Economy Bounces Back

by Elizabeth Millard

• • •

Many economists posit that it will likely be another few years before there's a full economic recovery, but some companies are feeling stronger already, and that growth can trickle down to the data center. Lean budgets may be looking less anorexic these days, and as the recovery gears up, IT managers will probably get the chance to implement more servers and hardware in the data center than they have in the past couple years.

As managers await increased IT budgets, here's a look at where data centers might be spending their money in the near future.

Virtualization-Optimized Platforms

Will Charnock, vice president of technology at IT hosting firm The Planet (www.theplanet.com), notes that if he were buying internal IT equipment, he'd go for virtualized servers because they offer more memory, more density, and next-generation processing technologies, with faster memory buses and high bandwidth I/O.

"Some of the newer technologies consolidate server, storage, and compute into a single turnkey solution," he says, pointing to products with a unified computing platform, which make up the compute/server component and the network component with a unified fabric that carries storage, networking, and everything else through a virtualization layer on top.

Key Points

- Virtualized platforms are likely to be the next big thing with servers, but data center managers need to be careful about what type of workloads they run on them.
- Investing in SFP+ transceiver modules will ease the transition from 1GbE to 10GbE.
- Make room in your budget for monitoring devices to help you keep an eye on important environmental and network conditions in the data center.

"These new processor technologies are driving change, since they're specifically engineered to take advantage of virtualization," says Charnock. "The great news is that data centers can take advantage of bigger servers, but with less hardware, so they can distribute workloads across the servers."

He adds that the old mindset was that a data center could run only a single application on a server, but today, there's greater opportunity to consolidate workloads on these larger devices. Charnock does sound a note of caution, though: Companies should be mindful of what types of workloads are being run.

"If the workflow is heavily I/O-intensive, you have to be careful, since there can be contention between the applications, and that can actually cause the application to run worse in a virtualized platform than in a dedicated platform," he notes. "Virtualization isn't perfect for every application."

SFP+ Transceiver Modules

Although 10GbE technology has been available for almost a decade, its adoption rate has been slow, notes Steve Wong, vice president of marketing at ClearSight Networks (www.clearsightnet.com).

One of the reasons why the migration path from 10/100Mbps Ethernet data rates to 1Gb was smooth and effortless is because the latter is backward-compatible with the former. When a new switch or device was deployed, there was no need to replace 10/100Mbps equipment. Pricing was another consideration, Wong notes: 1Gb ports provide 10 times faster data rates when compared to 10/100Mbps, at only slightly more cost.

The same situation doesn't apply to 10GbE because it's not backward-compatible, driving up costs due to equipment replacement. But, Wong notes, there's good news.

"The recent introduction of the new SFP+ transceiver standard for 10Gbps Ethernet allows SFP+-aware 10Gbps networking equipment—using this new form factor specification—to link up with equipment and devices operating at the sub-10Gbps data rates," he says.

SFP+ and SFP form factors are compatible, he adds, meaning that a 1Gbps SFP can be plugged into an SFP+ cage. As data centers roll out 10Gbps infrastructures, the

FEATURE PACKAGE

Building On The Recovery

Drawing Up Data Center Building & Renovation Plans As Constricted Budgets Begin To Relax

by Sixto Ortiz Jr.

• • •

The old adage that "it's always darkest right before the dawn" may be a cliché, but it sure rings true when times are hard. Even though the current economic malaise may seem like an interminable slog to executives, employees, and consumers, there is no doubt that the resilient worldwide economy will recover.

When corporate money begins to flow again, IT departments whose budgets had been slashed will suddenly have dollars to spend. So, data center managers looking to build or renovate data centers need to stay on top of the right products, technologies, and services they will need to stay ahead of the curve and get their enterprises ready to compete in the recovering economy.

Waiting For The Cash To Flow

A key question for cash-strapped data center managers is figuring out what to focus on as they wait for an economic recovery and an increase in budget dollars. And when times are tough and budgets are pared back, there is no better area to focus on than simply doing more with less. Jeff Grace, president of NetEffect (www.neteffect-it.com), says the economic downturn is an excellent opportunity for IT managers to think more clearly in terms of ROI.

Key Points

- As the downturn subsides, data center and IT managers should look to implement projects that deliver quick payouts and maximize the efficiency of existing resources.
- In spite of the ongoing downturn, data center and IT managers are still facing exponential growth in the need for processing power and digital storage.
- The trend toward green technologies that enhance energy efficiency and reduce power consumption will continue.

"The recession will linger in the minds of C-level executives for quite some time, and IT managers will be much more successful if they can present their ideas and proposals more clearly in terms of the actual business and financial benefits to their organization," says Grace.

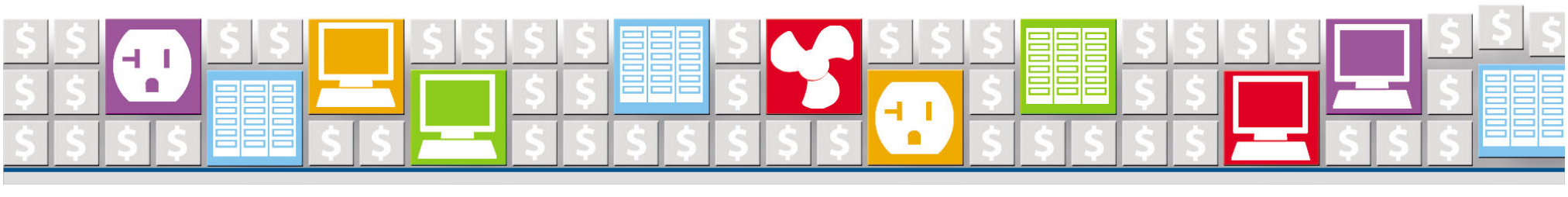
Even though times are challenging, data center and IT managers must start planning for the future now, says Asif Hazarika, senior director for product management at IP Infusion (www.ipinfusion.com). According to Hazarika, Internet usage is doubling every year, driven by IPTV, mobile Web applications, gaming, and social networking. The demand for Web servers and storage will continue to grow, he adds, so data center and IT managers will need to plan how to upgrade their data centers to meet future demands.

Hazarika says data center and IT managers should plan on increasing energy and cooling efficiency and also reduce their equipment and data center footprints. Energy costs are a substantial chunk of data center expenditures, so well-thought-out initiatives in this key area will deliver bottom-line savings.

Jeff Lowenberg, vice president of facilities at server hosting provider The Planet (www.theplanet.com), emphasizes that for companies building out data centers, energy efficiency should be near the top of the list of important considerations, as should adequate power density to accommodate current and future needs. Managers should look to take advantage of renewable energy sources and look to build in cooler climates where "free cooling" opportunities are available. Also, he adds, IT and data center managers should take a look at the critical nature of applications supported in the data center so appropriate levels of redundancy can be determined.

Top Trend: Virtualization & Consolidation

As data center and IT managers plan ahead for their building and renovation needs, experts agree they shouldn't forget about virtualization and consolidation. Virtualization and consolidation allow data center and IT managers to reduce their costs and actually deliver on the promise to do more with less. Simon Thompson, vice president of information technology for Mitel (www.mitel.com), says by moving to a virtualized data center, IT managers are able to consolidate servers, reducing the number of operational data centers and associated hardware and management costs.



SFP+ form factor, originally intended for 10Gbps Ethernet, will further help smooth the transition from 1Gbps to 10Gbps Ethernet, Wong believes.

Another hardware technology that can ease the transition to 10Gbps is data access appliances, notes John Busch, CEO at Schooner Technology (www.schoonerinfotech.com).

"These appliances act like building blocks," he says. "The net effect is a very big TCO reduction and a reduction in complexity." These appliances integrate flash memory, multicore processors, latency interconnect, and optimized data access and caching technologies, he notes.

Increased Monitoring

With both servers and other hardware, it's likely that data centers will have to implement more monitors in the near future, notes Tom Gallatin, managing partner for Gigamon (www.gigamon.com). He notes that more monitoring is needed in several areas, including network availability, application performance, security from both intrusion and extrusion, data access, and configuration optimization.

These monitors could fit in with environmental monitoring appliances, which would give a data center manager a very robust view of the entire facility from multiple aspects, including whether applications are being utilized properly and if temperatures are remaining steady. This type of consolidation and centralization has numerous advantages, notes Gallatin, such as reduced maintenance, overall cost reduction, and simplified management.

Moving toward virtualized platforms or switching hardware to 10Gbps might be strategies for the future, but implementing monitoring technology can be a next-round budget item, particularly because optimization can result in immediate server power consumption reduction, adds Motti Tal, executive vice president of marketing and business development at OpTier (www.optier.com).

He notes that understanding server usage is vital, because often, servers are over-consuming, so data center managers might be tempted to bring in more hardware and servers unnecessarily.

Top Trend: InfiniBand

A switched fabric communications link used mostly in high-performance computing, InfiniBand almost became extinct only a few years ago, notes Steve Wong, vice president of marketing at ClearSight Networks (www.clearsightnet.com), but now it's enjoying renewed interest. "InfiniBand supports failover measures and has important applications in high-performance data centers with its ability to transfer massive amounts of data," he says. "Its scalability makes it especially attractive to data centers that virtualize server and storage units."

Technologies & Trends To Watch

One of the key areas to watch, and one that goes hand in hand with the trend toward virtualization and consolidation, is the use of software as a service or cloud computing.

Yaron Sinai, CEO and founder of Elementool (www.elementool.com), a provider of Web-based project management tools, says SaaS tools allow IT managers to perform key business functions without having to build out the hardware or devote the time to developing the software required to support the necessary systems. "These tools provide a general business framework for data centers without the traditional costs, making them ideal for positioning companies for future growth," Sinai says.

Another key technology trend involves the use of modular design for data center construction. Dr. Mickey S. Zandi, a data center and information availability expert and consultant with Sungard Availability Services (www.availability.sungard.com), says organizations today are taking a more budget-friendly approach by designing and building data centers in modularized phases. This approach, he adds, allows organizations to address their current needs and then add space and capacity as requirements change over time.

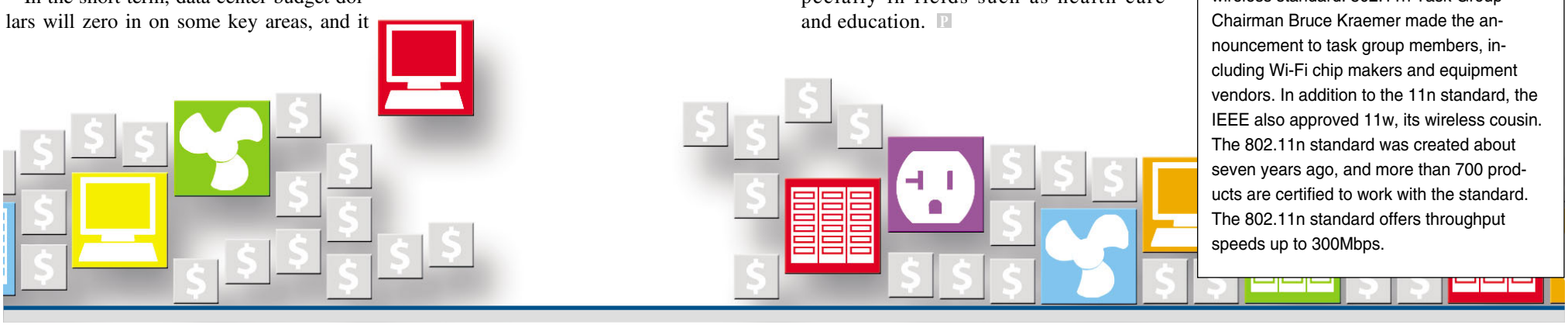
Where The Dollars Will Go

In the short term, data center budget dollars will zero in on some key areas, and it makes sense that these key areas will primarily focus on delivering savings to the bottom line.

Simon Thompson, vice president of information technology for Mitel (www.mitel.com), says virtualization and the deployment of applications into the data center will be crucial to cost and energy savings as well as the simplification of the data center. And, says Mike Klein, president and COO of Online Tech (www.onlinetech.com), a provider of colocation and managed data center services, data center and IT managers will have to focus their efforts on cooling and storage simply because storage requirements and computing capacity are rising exponentially.

"For every watt of power you deliver to a server," says Klein, "you need a certain number of watts of air conditioning." And whether it's more cooling or increasing the efficiency of existing cooling, capital investments that may be difficult to absorb will be required.

Irwin Teodoro, director of engineering and systems integration for Laurus Technologies (www.laurustech.com), says that in the short term, many companies will simply be looking to catch up on deferred projects that were initially scheduled in late 2008 or early this year, when IT budgets were slashed. Many of these projects, he adds, involved routine or preventive maintenance. Also, security and compliance will take on new importance, especially in fields such as health care and education.



News

Dell Buys Perot Systems

Dell has agreed to buy IT services provider Perot Systems for $3.9 billion in a move to expand its business beyond personal computer sales and help it better compete with rivals HP and IBM in the computer services market. Dell and Perot had combined revenue of $16 billion from enterprise hardware and IT services during the past four quarters, Dell says, with half of that coming from services and support. Last year, Perot contributed $2.78 billion to that total. Perot will become Dell's services unit upon completion of the acquisition, and Perot CEO Peter Altabef will lead it. The deal is expected to close during Dell's November-to-January fiscal quarter.

Partial Trademark Victory For Google In EU Battle

Amid Google's long-running trademark infringement battle, the Internet company has found a partial victory in the legal opinion of Advocate General Poiares Maduro of the European Court of Justice. Maduro believes Google does not infringe on trademark rights by selling keywords to advertisers. The case is under review by EU's highest court after being requested by a French court, where companies such as Louis Vuitton are at odds with Google. However, Google has still not completely overcome its battle, as Maduro also states Google could potentially be in trouble if companies prove their trademarks have been tarnished. A final verdict is expected early next year.

Software Company Sues Facebook

Facebook has been sued by a small software company on claims the social networking site is violating a two-year-old patent pertaining to privacy controls. Baltimore-based WhoGlue filed the lawsuit against Facebook in Delaware federal court. The company claims Facebook infringes on its patent for "Distributed Personal Relationship Information Management System and Methods," though the filings are vague on how Facebook allegedly violates the patent. The privacy controls instituted by Facebook during the past two years have given greater control to its users. WhoGlue is suing for monetary damages as well as a permanent sanction against Facebook from violating its patent.

802.11n Wi-Fi Standard Approved

The IEEE (Institute of Electrical and Electronics Engineers) has approved the 802.11n wireless standard. 802.11n Task Group Chairman Bruce Kraemer made the announcement to task group members, including Wi-Fi chip makers and equipment vendors. In addition to the 11n standard, the IEEE also approved 11w, its wireless cousin. The 802.11n standard was created about seven years ago, and more than 700 products are certified to work with the standard. The 802.11n standard offers throughput speeds up to 300Mbps.

News

eBay, Yahoo! Top Most Trusted List

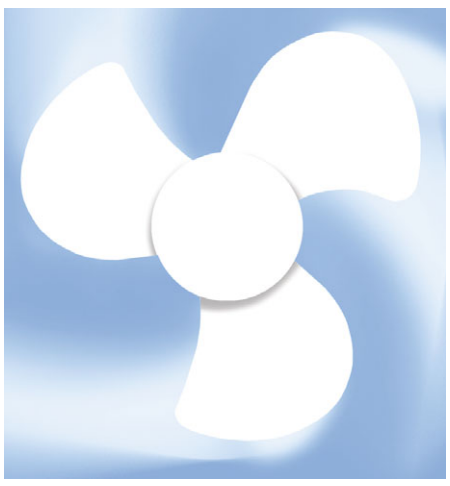
A recent study by the Ponemon Institute and TRUSTe found that eBay heads a top 10 list of Web sites that consumers perceive to be the most trustworthy. The list includes the U.S. Postal Service, Nationwide, Yahoo!, and Facebook. The study consisted of analyzing the privacy practices of 23 companies that a survey of 6,000 U.S. consumers previously ranked as trustworthy. The top 10 winners are the companies that have the best privacy practices. TRUSTe spokeswoman Carolyn Hodge says the winners are based on consumer perception rather than actual privacy, but she adds that none of the companies on the list is doing a poor job with privacy.

Alleged Scammers Face Microsoft Lawsuit

Microsoft is suing several companies that allegedly use deceptive advertisements to dupe consumers. Microsoft says that Direct-Ad Solutions, Soft Solutions, qiweroqw.com, ote2008.info, and ITmeter try to trick people into buying their products. The four companies reportedly display a pop-up resembling a Windows utility running a computer scan on the user's screen. The pop-up says the user's computer is infected and that the user needs to buy and install the company's product to get rid of it. After the user pays, malicious software is installed on the user's computer. Microsoft Associate General Counsel Tim Cranton says the company wants to help deter malvertising in the future.

Researchers Work To Improve Data Center Cooling

To help avoid situations where data centers can no longer add equipment because of limits to power and cooling capacity, a team of engineers from Lawrence Berkeley National Laboratory and several leading data center equipment manufacturers have tested ways to deliver the exact amount of cooling a device needs to fit the computing environment. This



would allow data centers to avoid overcooling equipment that doesn't need to be cooled as much as other components. The process involves gathering temperature readings from sensors built into the servers and allowing the air-conditioning system to keep the facility at the appropriate temperature—as opposed to the traditional method of managing based on sensors near the air inlets of computer room air handlers.

Study Looks At Life Of Information Workers

A recent report from Forrester Research found that only 11% of smartphones are used by workers on the job, based on a survey of 2,000 "information workers." Additionally, Forrester Research indicates that less than 25% of workers use instant messaging services for business, and only about 10% use videoconferencing technology at work. Email and the telephone are still the primary methods of business communication. About 30% of those surveyed say they work in teams where members are in different locations, and about 11% say they work with employees from other firms.

FEATURE PACKAGE

Staffing Plans For Better Times

Prepare For The Future By Getting Ready Now

by Bruce Gain

• • •

Key Points

- Don't be caught empty-handed when the job market improves and positions become harder to fill by not seeking talent now.
- Think about future hires in terms of how to meet the goals of the IT department while not over-focusing on short-term needs.
- Don't yield to the temptation to overstaff even when the budget becomes available.

According to a survey conducted by analyst firm Computer Economics earlier this year, 46% of all IT organizations surveyed say they plan to reduce headcount this year, compared to 27% that will increase their headcounts. Another 27% of IT organizations in the study said their staffing levels would remain unchanged. All told, the median headcount of IT departments surveyed is expected to remain unchanged.

"Our expectation is that while the recession may be over, as the treasury secretary suggests, IT spending and hiring will remain restrained throughout the remainder of this year," says John Longwell, an analyst for Computer Economics. "I would look for an uptick in hiring of contract and temporary workers as the first sign of a recovery. The PC vendors and equipment manufacturers are also reporting improvements, so that is another good early sign that spending is loosening up."

But regardless of the dour climate for those seeking jobs in the sector, the economy's rebound should eventually positively affect IT employment. When that does happen, getting the right staff in place will prove all that more challenging as the talent pool shrinks.

Here is a look at some ways that you can plan for hiring when the IT sector does rebound and how to find the right talent when you need it.

Take Advantage Of The Lull

The hiring situation and the effects of the economy in general have taken their toll on IT departments as well as enterprises in general this year. In IT departments that have slashed staff or have instituted hiring freezes, admins are increasingly forced to take on more job responsibilities and tasks without extra pay to fill in the manpower gap. But one way to make the most of a not-so-great situation is to use the lull in hiring to prepare for when you get the green light to start hiring again. Instead of waiting for the next up cycle, now is the time to actively search and get ready to recruit, says Chris Tratar, senior director of product marketing for talent management services provider Taleo (www.taleo.com).

"We have seen that many of our customers are planning ahead and building up talent pools even during the downturn," Tratar says. "This way, they will have a ready pool of talent to choose from instead of having to start a traditional recruiting process when they start to get more budget."

Looking ahead is part of what Tratar calls the talent pool concept. "There are certain skill sets that are hard to fill in the IT industry, regardless of whether there are a lot of people out of work or not," Tratar says. "Even if you are not hiring today, then you can have the visibility to hire the talent you need in the future."

Don't Jump The Gun

Understaffed IT departments face a number of issues, ranging from unhappy end users who equate a lack of support with bad service to the low morale of admins who have way too much of a workload than what is reasonable. If comments in IT-related forums serve as an indication, common complaints among admins are that they are really doing the work of two admins without extra compensation or are unable to specialize in a particular area because of the varied tasks they have to perform.

Unfortunately, the trend to do more with less will likely continue, even when the IT employment situation gets better and there is more money for new hires, says Roger Kay, founder and president of the analyst firm Endpoint Technologies Associates (www.ndpta.com). "Doing more with less is a requirement these days, and rather than hire new staff, IT managers are looking to automate more routine processes to free up existing staff to do higher value-add projects, which will improve the company's competitive position or make workers more efficient," Kay says.

Still, many IT departments might err on the side of overstaffing, which carries with it inherent risks and pitfalls. Managers should thus weigh budgets for new hires extra carefully in the future, Kay says.

"Hiring of new staff members should wait until incremental revenues flow in so that the IT department doesn't have a negative effect on cash flow," Kay says.

Go The Temp Route

Hiring temporary workers can serve as a relatively inexpensive way to help handle today's needs before the day comes when there is enough of a budget to add more staff to the IT department.

"The other strategy that many companies now generally use, especially in IT-related industries, is hiring temporary or contract labor and then converting them to full-time employees," Tratar says. "This reduces their initial investment and enables them to hire only the top performers when they get the budget."

Think Strategically

Staffing in the future will involve matching emerging technologies and data center applications with specialized skill sets of new hires, says Rob Enderle, principal analyst for Enderle Group. "[IT departments] will need to have folks on staff who can manage an increasing number of service providers and handle a diverse blend of internal and external resources," Enderle says.

Determining the skill sets that will be needed when it is time to hire again is part of thinking strategically and "getting outside of tactical thinking," Enderle says.

"You don't want to hire people to deal with today's problems—you can get services and temps for that. Instead, you need to hire for the problems and projects you will be taking on as budgets are relieved," Enderle says. "This means the skill sets will likely be different and the teams built around future needs, not current ones." P

Top Trend: Put Technology To Work

There are a number of ways to use software tools to prepare for adding staff. Among features that software tools offer are Internet and database mining for potential hires and screening and assessment capabilities, says Chris Tratar, senior director of product marketing for talent management services provider Taleo (www.taleo.com). Facebook, LinkedIn, and other networking sites can also be used to hunt for talent, Tratar says. "These tools are about getting ready for when the economy recovers," Tratar says. "You can't be flatfooted. You have to react fast."

Rough & Tough

LXE MX9 Series Ultra-Rugged Handheld Computers For Physically Demanding Conditions

by Blaine Flamig

• • •

Ideally, all data-collection tasks in enterprises would involve employees and equipment working in the best possible physical conditions. Unfortunately, some enterprise settings provide anything but perfect conditions. For such physically demanding conditions where data collection is a must, LXE, a division of EMS Technologies, offers the new MX9 Series of rugged handheld computers.

Replacing LXE's MX5 handheld series, the MX9 lineup includes the MX9, MX9CS, and MX9HL Ultra-Rugged Handheld models, all built to withstand unforgiving outdoor elements while simultaneously providing best-in-class performance. Featuring a rubber overmold exterior, the 2.1-pound (with scanner), 9.9 x 3.9 x 2.7-inch (HxWxD) MX9 Series handhelds carry an IP67 rating that indicates their abilities to perform in harsh environments. The MX9CS, for example, ships with low-temperature batteries and integrated heater control functionality, letting it adapt to temperatures ranging from -22 degrees Fahrenheit to 122 degrees. The handhelds are also well-suited for agriculture, forestry, and public safety applications. Furthermore, the MX9HL is designed for hazardous work settings, touting Class 1 Div. 2 Hazardous Location compliancy.

Sporting a removable rubber-grip handle with two-finger trigger, as well as a 3.7-inch resistive touchscreen display that's viewable in full sun and poorly lit settings, the MX9 Series models offer a 62-key alphanumeric or 38-key numeric backlit keyboard, microphone and speaker, 10 one-touch Function keys, and all-range barcode data captures from 4 inches to 40 feet. In addition to optional built-in GPS, the models pack an 800MHz PXA320 processor, 128MB of SDRAM, support for up to 4GB SD cards, Bluetooth 2.0 and 802.11a/b/g connectivity options, WWAN, Windows CE 5.0 Professional, and LXE Toughtalk technology.

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PDUs Direct To You

Top Quality At The Lowest Price Available

by Blaine Flamig

• • •

Premium power distribution without the premium price. Such a notion may sound too good to be true in today's sagging economy, but such an approach is precisely the customer-oriented mission PDUs Direct (www.pdusdirect.com) was built on and continues to operate by.

As the online wholesaler of basic, metered, and switched PDUs from long-time PDU maker Server Technology's product line, PDUs Direct is dedicated to providing its customers the highest quality in-rack power strips, power distribution, and rack PDUs offered at best-in-class prices.

Established in November 2008 at the outset of the economic downturn, PDUs Direct understands the financial, cost-cutting challenges now facing SMEs. That's why PDUs Direct is committed to supplying its customers with industry-standard, industrial-grade PDUs suitable for network and server environments at prices falling 10 to 20% below competitors' online prices. PDUs Direct's customer commitment extends to the company's easy-to-use, uncluttered Web site, which makes locating the right PDU a quick, streamlined process without skimping on the pertinent product information customers require.

PDUs Direct's dedication to its customers is seen through its next-business day shipping policy; 100% satisfaction, 30-day money-back product guarantee; and ultra-convenient email and live chat technical support options. Whether the question or concern is in regard to a product, order, or application, PDUs Direct's chat support pairs customers with live operators who possess years of real-world PDU experience and knowledge. Customers can even request a chat transcript for reference following a chat session.

PDUs Direct power distribution units are constructed in steel-case enclosures, available in a variety of outlet and power-level configurations, and ship with a customer-selected power cord. Each switched PDU sold also includes the latest firmware from Server Technology and fully networked outlet management and power and environmental monitoring abilities. P

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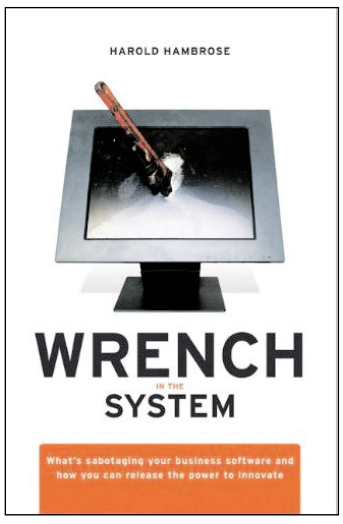

Fixing Software

"Wrench in the System: What's Sabotaging Your Business Software and How You Can Release the Power to Innovate"

Author: Harold Hambrose
Publisher: Wiley
Price: $45 (list)
Format: Hardcover, 272 pages

by Kurt Marko

• • •

COMPUTER SOFTWARE is among some of the most intricate and elaborate creations—complexity that's likely the root of why it's so failure-prone, hard to use, quirky, and rife with security holes. Yet is software really so different from other inventions? Is it inherently more byzantine than a jetliner, automobile, or even cell phone? Or is the problem more that standard software development practices just haven't matured?

Harold Hambrose, in "Wrench in the System," argues the latter: that software systems aren't subjected to the same rigorous, formalized design and specification processes as their physical counterparts. "It's just a product—a man-made tool that is developed, manufactured, marketed, licensed, and sold," he says. Yet there's one key difference: "We have come to accept that the software we use won't work in the way we expect."

Clunky Software

"Wrench in the System" is replete with examples of clunky software, but perhaps the most striking is the dichotomy between the elegance of Apple's iPod and the frustrating awkwardness of its accompanying iTunes software. "The iPod's most compelling aspect was its combination of extraordinary technology and brilliant design," Hambrose writes. "The iPod succeeded not because it packaged great features in a new form, but because anyone could easily use those features." Yet he turns sour when reflecting on the other key piece of the iPod ecosystem, iTunes. "Here, even technology's coolest music player demonstrates profound weakness in understanding how software should satisfy its end user," noting that even his tech-savvy teenage daughters struggle to find and download content.

The crux of the problem is that most software is developed with a focus on features and technology, not usability and intuitiveness. Elegant software "doesn't happen by accident; it represents a commitment to specify, test, and evaluate the quality of the users' experience every step of the way." The missing piece, Hambrose says, is a formal design process. For example, builders of a skyscraper don't start with detailed engineering blueprints, but architectural drawings illustrating various design concepts. Yet Hambrose claims software developers too often ignore who will use a product and how they'll use it, jumping straight to feature lists and functional specifications—the coder's equivalent of a blueprint.

Design-Driven Development

Having outlined software's inherent design challenges, Hambrose spends the remainder of the book detailing the steps of a user-centric, design-driven development process. Many of his recommendations—measuring an existing system's productivity, identifying user needs, focusing on low-cost application changes that yield the greatest bang-for-the-buck—are familiar to anyone who's read more than a handful of software development titles. But Hambrose reprises a consistent theme: Software developers spend too little time and effort fully assessing and understanding user needs, and they often lack the training to do so.

The book provides several strategies for creating more usable and productive software. One example offered in the book is to eliminate cluttered user interfaces or unnecessary process steps that cause needless confusion. Hambrose also stresses the importance of communicating with users in terms they can understand, avoiding specialized jargon, and using graphical dashboards that can transform a muddle of data into meaningful information. He concludes with advice on finding design talent internally and evaluating outside consultants.

Improve It

"Wrench in the System" is an insightful examination of the problems with today's software systems and ways to improve them. Hambrose's design perspective is a refreshing alternative to the conventional software development wisdom and should serve as a manifesto for those trying to improve the quality and usability of business applications. P

KEY CONCEPTS

- Software applications continue to underwhelm and frustrate most users because developers don't assess and understand what users need and how they will interact with the system.
- Applying formal design methods and human factors engineering expertise, commonly used with physical products such as cars and appliances, to virtual products such as software and Web sites can dramatically improve their performance, reliability, and user satisfaction while reducing costs.
- Good design isn't expensive; low-cost prototyping and simple application changes can yield substantial improvements.
- Software development managers need not turn to product design consultants for expertise; there are ways to find hidden design talent within existing staffs.

THREE QUESTIONS

DataPreserve Gives Small Companies Big-Company Backup

Reseller-Based Online Backup Offerings Combine Features With Affordability

DataPreserve®

by Daniel P. Dern

• • •

THERE'S NO SHORTAGE of products and services for local and offsite backups. But features that save money by optimizing storage consumption and simplify and speed the retrieval of lost data or the rebuilding of system disks tend to be priced more for enterprise budgets than for small and even medium-sized companies.

One company addressing this is DataPreserve (www.datapreserve.com). Based in Scottsdale, Ariz., DataPreserve makes highly secure enterprise-class online backup and storage solutions available to smaller companies—those with anywhere from five to 100 computers—by reselling its service through SME-sized MSPs, VARs, and other resellers who in turn include DataPreserve's services in their portfolios.

Founded in 2005, DataPreserve's customers through its resellers include medical offices, trade unions, mortgage brokers, county bar associations, and thousands of other companies. Carl Landis serves as DataPreserve's data center director.

■ What are the biggest IT-related issues facing today's small to midsized enterprise?

"There's a growing awareness of the need for backup by more companies, including doctors' offices and other small medical sites," says Landis. "This includes onsite for convenience and offsite for disaster recovery and for compliance. At the same time, all companies are looking for a cost-effective way to securely store their data remotely. In a tough economy, SMBs have to justify the deployment of a SAN- or NAS-based storage solution and the people to run them. They're looking for offsite solutions to manage that process."

■ What should *Processor* readers know about your company's products?

DataPreserve offers two backup services: DataPreserve Pro, based on ROBOBAK, and DataPreserve Remote Backup.

"DataPreserve Pro provides remote online backup and storage, using ROBOBAK's enterprise-level software, performing agentless, block-level backup," says Landis. "DataPreserve Pro is good for all backup sizes and file sizes. Pricing is based on the volume of stored data. We support multiple operating systems within the same network; can do automated, unattended, and scheduled backups; and will handle Exchange, SQL, and other database files. This makes DataPreserve Pro ideal for integrated local backup as well as for remote and branch offices."

DataPreserve Pro can also create a local backup, on any available device, "and users can then sync that backup to our remote servers," notes Landis. "This creates an effective replacement for tape."

According to Landis, DataPreserve Remote Backup is good for quick simple backups. "Remote Backup provides file-level backup of up to five systems—servers, desktops, or laptops. It supports 'flat' files like Word, Excel, and PDF. Pricing is based on the number of computers and amount of data being protected and the number and type of Premium Features selected."

DataPreserve stores its customers' data in a secure commercial Tier 4 data center. "That's one thing people like: We have private cloud storage. People like to know where their data is being stored," says Landis.

■ What makes your company unique?

"We do a 'thin' backup, scanning changed files and just backing up block-level changes," says Landis. "We're not the only ones to do that, but our way is much more efficient, saving time and saving energy. We also let you do the local and remote backup, through this agentless software. We don't try to sell hardware—you can use your existing storage for the local backup. There's an OpenFile process in the client that can back up files that are in Open status, e.g. Outlook, Exchange, [or] SQL."

Also, says Landis, "We pass storage savings achieved through deduplication and compression along to our resellers. Our pricing model allows MSPs to make money, while still offering their customers great prices for enterprise-class backup." P

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HOW TO

Get Started With Capacity Management

The Alternative To Throwing Hardware At The Problem

by Drew Robb

• • •

IN SOME CIRCLES, CAPACITY MANAGEMENT is regarded as something of an esoteric art. Yet when you look at the list of proponents, such as Verizon, Visa, HP, IBM, and Oracle, you get the idea there must be something to it.

OK, so what is it? A group of standards and processes collectively known as the ITIL (IT Infrastructure Library) defines it as a group of work processes associated with the provisioning and management of IT resources.

"Capacity management is the proactive task of forecasting, anticipating, and adjusting to growth or other changes to minimize or eliminate the impact on the organization," says Steve Wong, VP of marketing for ClearSight Networks (www.clearsightnet.com).

What does it accomplish? According to G. Jay Lipovich, director of product management for Data and Performance Management at BMC Software (www.bmc.com), it tackles such things as how much growth existing systems can cope with before they break, how much hardware will have to be purchased, when to cope with anticipated growth, and what is behind a performance bottleneck.

TOP TIPS

- Select a capacity management database capable of maintaining metrics from all OSes and applications in use, not just one platform.
- Software costs range from $20,000 to more than $1 million. Start small, and see how it goes. If the ROI is there, expand the scale of your deployment.
- Educate yourself using the Internet, by reading the capacity management chapters of the ITIL handbooks, or by joining the CMG (Computer Measurement Group), which has an annual conference and local chapters for capacity managers.
- Don't get too bogged down in the details. Because capacity planners deal with averages, working at too fine a level of detail can bog down analyses and has little or no improvement on the precision of the work.

Accomplishing those results, though, is not a plug-and-play matter. It takes hard work based on really knowing what you are doing. Education, therefore, is the first step to be taken in any capacity management journey.

"Awareness and education are the best ways to ensure a successful implementation," says Wong. "Speak to your industry peers at other companies that have successfully rolled out capacity management programs. In addition to helping you navigate through the process of tools selection and data center deployment, they may be able to help you avoid the common pitfalls and mistakes that are often made—because they have made them."

Once you are clued in on the subject, BMC's Lipovich says that it is vital to gain management buy-in before commencing.

"Gaining senior management commitment to the value of capacity management is key," says Lipovich. "There must be organizational commitment to the efforts, because cooperation is needed from the lines of business, development, IT operations, and finance to achieve results with the highest value to the enterprise."

Steps To Take

Assuming that a basic understanding of capacity management exists and that management buy-in has been obtained, the next steps include the following.

Staffing. In smaller sites, a few generalists do everything. One of them can be assigned the capacity management hat. Larger sites demand several people to look after the various aspects of capacity management—some to plan capacity for the future and others to manage the immediate performance concerns of applications.

Ron Potter, manager of best practices at capacity management vendor TeamQuest (www.teamquest.com), says he once thought mathematicians would do well in capacity planning due to the formulas and statistics involved. If such people lack IT experience, though, it's impossible for them to judge the reasonableness of the conclusions.

"Only experience and intuition can accurately judge whether a result is reasonable," says Potter. "For the most part, I have found that system programmers and system administrators make the best capacity planners, especially those with considerable operational experience."

Training. Clearly, capacity management is an area where training is required. Plenty of training courses are available from ITIL-related organizations. Groups such as CMG (Computer Measurement Group) organize courses, seminars, and conferences. Vendors also offer training and conferences on capacity management basics and the use of their own tools. There is no doubt that investing in capacity management and process-based training will pay big dividends in the long run. Make sure, then, that whoever is assigned to these duties is supported in his or her efforts to learn the basics of the subject. Sending the staff to an annual conference is another good way of staying up-to-date.

HOW TO

Integrate IT Departments

Evaluate Inventory & Communicate Changes

by Curt Harler

• • •

It is every IT manager's nightmare: The organization acquires another firm, and the boss charges you with integrating the IT departments. To add acid to a bitter pill, most of your systems are different from theirs. Be prepared to deal with such issues as hardware, software, and personnel.

Best Practices

According to Chris Howard, Jack Santos, and Mike Rollings, members of the executive analyst team at Burton Group, that "worst case scenario" is, in most cases, the usual case.

The team's advice is first to see what is already owned and whether the company's goals can be accomplished without extra investment. "Go-forward tool choices should be based on available skills and risk assessments and vendor consolidation/management," Howard says. An Enterprise Architecture program is essential to ensure business goals are realized in the future.

"The common practice of simply continuing to support [the] applications, processes, and infrastructure that come with an acquisition is no longer viable," agrees Janet Luisser, program manager with Open Text (www.opentext.com). "Organizations cannot afford to duplicate resources and business systems where overlap and redundancies exist."

Her advice is to prioritize business processes and examine their current technology inventory, looking for process optimization and cost efficiencies. "A critical component is to re-evaluate legacy systems and investments," she says, adding that legacy systems typically have grown far larger than envisioned by their creators, are filled with unneeded data, and are expensive to maintain. Many SMEs re-examine the existing corporate IT infrastructure—each individual system—and pare it down to the essentials and archive the information assets that are required for long-term business, records management, and compliance needs, she says, adding, "The dilemma becomes what to archive, how to do it, and what best practices apply."

TOP TIPS

- Build a small team of trusted, knowledgeable employees to assess systems in regard to which to keep and which to get rid of.
- Include both business and IT input when making decisions.
- Base tool choices on available skills, risk assessments, and vendor consolidation/management.
- Make sure you communicate what you are doing and also why you are doing it.
- This is not the time to use new technology. It will complicate the merger and possibly introduce new risks.

Burton Group's Santos suggests a small team of trusted, knowledgeable employees, both business and IT, to quickly assess, on a function-by-function basis, which products stay, which go, the savings associated with their recommendation, and a recommended timetable and migration plan.

"The assessment needs to account for technical quality of the application (based on service-level agreements and metrics) and the functional quality of the app (based on business input and feedback as well as business strategy/direction)."

Some systems, such as email, may not require much analysis. As long as applications have not been built to depend on a particular provider's email product, it may be as simple as selecting the one you want across the board and moving on.

The next step is in the segregation of applications and supporting infrastructure. For applications, Santos recommends a classic application portfolio analysis. "I would add a discussion of the fundamental operating model of the business," he says, noting that the operating model sets the tone by delineating where the business feels what processes must be the same, what processes must be integrated, and the most important information that must flow between.

"This allows the identification of areas requiring common applications and [the areas] that also have the business resolve to achieve it," he says.

Bridge Technology

SMEs may opt to synchronize applications and use information transformation technologies to break down silos, at least to provide access to content and data. "Depending on how closely aligned the companies are in the merger, such an approach, while not fully integrated at the business process level, may be adequate," Luisser says.

Howard says an SME can look at ESB (Enterprise Service Bus) technology if they want to put something in place and hook everything into it. This would allow for bridging the gap between the current systems and the eventual new one.

"The added complexity is worthwhile if the end goal is to gradually migrate and consolidate the capabilities that are connected to the bus," Howard says. "An ESB is also useful to abstract away the complexities of protocol translation and data transformation."

However, when considering technology, Santos warns to not embark on new paths or use new technologies that are unfamiliar: "It unnecessarily complicates the merger and introduces new risks. Data migration

Processes. ITIL is a popular approach to IT processes. There are others which go under a variety of names.

"Processes ensure you come up with the same answer every time you analyze the same pieces of data," says Potter. "Meaningful, repeatable, and reliable results generate credibility, something capacity management needs to survive."

Sample processes can be obtained in ITIL books or from consultancies and vendors.

Data. The type and amount of data you need to collect depends on the desired goals. For servers, collect data such as processor busy, disk read/writes, memory statistics, job/process execution statistics, and database-related statistics. Networking capacity managers, on the other hand, commonly look at bandwidth, transmission delay, router, firewall, and packet statistics.

"The types of data depend on capacity management goals," says Potter. "In most organizations, too much data is collected initially, then reduced and refined as the capacity management organization matures."

Whatever data is gathered, it should be captured in the same intervals across all infrastructure components. Otherwise, it is difficult to analyze the interactions between a transaction server and a database server if one is collecting at one-minute intervals and the other at five-minute intervals.

Tools. Tools are a core element of any capacity management department. OSes such as Windows, Linux, and Unix come equipped with various tools to measure and trend performance data. Unix, for instance, offers VMstat, TOP, and other freeware to record basic statistics of system performance. For some organizations, using these along with spreadsheets may be enough. Others may need to make a more comprehensive address to the subject using products from capacity management vendors.

"Contact at least three vendors and ask them to show you case studies of how companies similar to yours have deployed their tools for the purposes of capacity and performance management," says Wong.

Key Points

- Capacity management solves such problems as how much growth existing systems can cope with before they break, how much hardware will have to be purchased, when to cope with anticipated growth, and what is behind a performance bottleneck.
- Learn before you leap. Get clued in on capacity management via education and training.
- Start with the low-hanging fruit. Don't try to solve all organizational issues in your first week.

Initial Success

Some who are enthusiastic about capacity management begin by attempting to solve all organizational concerns in one fell swoop, which is a big mistake.

"Do not try to 'boil the ocean' in initial efforts for capacity management," says Lipovich. "Begin with a small focus, demonstrate the value of the effort, then develop a larger scope."

That might mean concentrating effort on mission-critical resources or poorly performing applications before your enterprise as a whole. However, the quick results that stem from capacity management can transform the technology from a dark art into the flavor of the month.

tools (for merging databases) become pretty important."

As far as a timeline goes, Luisser says an SME should be able to have a unified view across key systems in three months. "More comprehensive integration may take nine to 12 months," she figures.

Herding Personnel

With any merger, there are going to be differences, especially if the merged parts of the new organization are geographically separate.

"People tend to cluster around their old habits and familiar faces, which makes bad habits harder to purge," Howard says, noting that organizational cultures are sometimes oil and water, especially when merging a process-driven organization with a more ad-hoc process organization.

"If there is one thing we have realized is that organizations are about people, and people want to use the tools and solutions that they have developed skills for and learned to love. User adoption of new applications and processes is a significant challenge," Luisser says, adding that SMEs need to look to introduce tools and technologies that enable the relevant existing technology investments to be migrated, but at the same time, show business benefit.

Beyond your company, management needs to assess the integration's impact to the customer and determine how it will be handled. Santos says to look at questions such as: How do you manage customer impact? What's the strategy for involving the subordinate organization (the target company)? How soon can you identify employees who will stay and start motivating them? How can you quickly address the culture issues that inevitably get in the way?

Burton Group's Rollings says a "planned approach" to influence is critical, and those in charge should prepare a formal communication plan.

"To create the communication plan, its creators must think about the purpose of the exchange of information and how it aids the program's purpose," he says. "Determine what or who provides the best connection between the program message being delivered [and] the various stakeholders and interested parties. The problem is that many devote little time to thinking through these issues and as a result, the communication is less effective.

"Not only do you need to communicate what you are doing, you also need to communicate why you are doing it," Rollings adds.

"Keep in mind that the merger is not just merging company assets [but also its] cultures, organizations, behaviors, beliefs, operating models, strategies, and many other components. This requires thoughtful leadership and communication," he concludes.

Key Points

- Assess the integration's impact on the customer.
- Be ready to deal with personnel issues as well as technology issues.
- Plan to have a unified view across key systems in three months with comprehensive integration in nine to 12 months.

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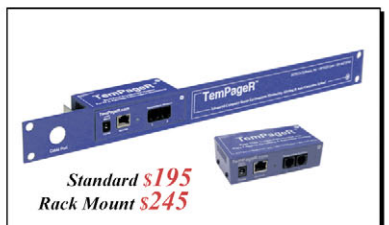

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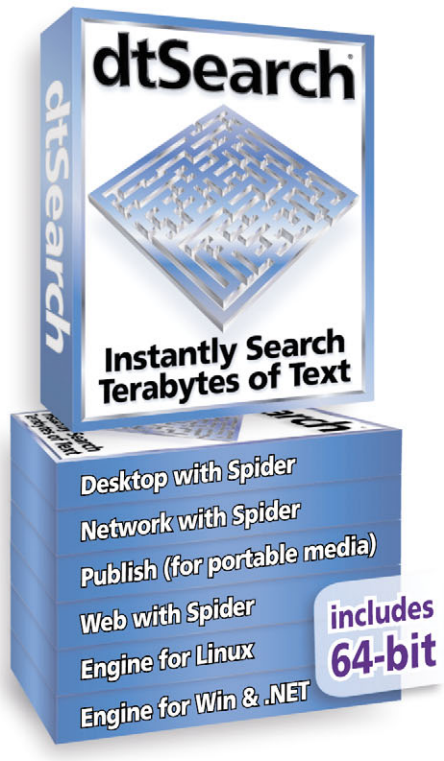

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SIX QUICK TIPS

Take Control Of Email Archiving

In A Time Of E-Discovery & Retention Requirements, Archiving Is Key

by Drew Robb

• • •

IF BENJAMIN FRANKLIN were alive today and working in the IT industry, he might be tempted to make an addition to one of his more popular quotes: "In this world, nothing is certain but death, taxes, and the continued growth of the email database."

Not surprisingly, email archiving products are a hot growth area these days. Beyond storing email properly, such tools help SMEs with individual mailbox recovery, e-discovery, mailbox storage optimization, database recovery, and retention management. In some cases, all of these functions are rolled into a single suite.

"Companies should consider all of their email-related business challenges and find a single solution that meets their needs rather than taking the resource-intensive and costly path of deploying and supporting separate point-level solutions to solve each individual problem," says Scott Whitney, vice president of product management at Mimosa Systems (www.mimosasystems.com).

BONUS TIPS

■ **Convenience is king.** There are many criteria that can be used in the selection of email archiving tools. One criterion that doesn't get enough attention, however, is end-user convenience. The simple fact is that if end users experience a problem with the archiving system, they will find a way to ignore the archiving process.

"Ensure email archive solutions are as transparent as possible for all end users," said Moosa Matariyeh, an enterprise storage specialist at CDW (www.cdw.com). "If archiving inconveniences users, they will likely find a way around the archival system."

■ **Set a retention period.** In order to prevent wild unchecked growth of email archives, precise retention periods are a must. "Identifying the length of time needed to retain each group of archived data will help keep unnecessary growth under wraps," says Matariyeh.

Cut The Cost Of E-Discovery

Organizations worldwide face growing challenges with e-discovery—litigation that demands large quantities of email as potential evidence. Lawyers have come to understand that email is the primary form of business communication. Because of this, it is commonly subpoenaed in court as evidence.

"When requested by the court, organizations must produce old email, no matter how much time or expense is required for retrieval," says Whitney.

Thus, it becomes important to find an email archiving product that supports legal discovery. That means being able to maintain a complete, searchable, unaltered archive of the original emails, which is an important point as lawyers demand originals with no possibility of executive tampering.

"Look for a solution that manages a complete copy of all current and historical email that can be quickly and easily accessed and searched for discovery purposes," says Whitney. Otherwise, you might end up spending many long nights huddled around the conference table trying to find the requested information or desperately hunting through a massive pile of old backup tapes for the right files.

Eliminate PST Files

One of the easiest and most effective things a company can do to improve email archiving is to eliminate the use of PST (Personal Storage Table) files. PST files are a popular method of storing local copies of old email on a desktop or network file server so that they can be quickly and easily accessed by the individual user. It works well for day-to-day email, but not as well as a large archive repository.

"This method of archiving creates significant challenges and risks for an organization," says Whitney. "However, from a compliance or legal discovery perspective, it can be costly and labor-intensive to manually collect and search each of the PST files for relevant email data."

A best practice is for email records to be kept in one centralized, searchable storage unit. Various email archiving tools are available that aid in locating PST files across servers and laptops and then import their data into a centrally managed archive.

Integrate Systems

Rapidly expanding SMEs face a real issue with IT systems. They implement disk arrays to store more data and hold backups, or they add a higher-end email system and then follow that up with some kind of approach to email archiving. The problem is that many of these systems don't play well together.

The solution is to look for ways to integrate a high-density disk platform with archiving software onto a single platform. This reduces the number of host bus adapters, cables, switches, and support contracts in the environment while also reducing power and cooling costs.

"Use an email archive package that integrates with your backup system," says Molly Rector, vice president of product management and marketing at Spectra Logic (www.spectralogic.com). "This enables the same policies and configurations to be set up for both systems."

Use Deduplication To Reduce Archive Size

Despite the data compression ratios being achieved by deduplication software, analysts

SIX QUICK TIPS

Harness RAID's Power

Find The Best RAID Configuration For Your Data Center

by Bruce Gain

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INCREASED RELIABILITY, redundancy, and higher performance for storage applications are among the benefits that the different RAID flavors offer to SMEs. But deciding which one of the many RAID levels best meets the needs of a particular application can introduce a set of complexities to address.

A data center server, for example, might require RAID 0 to boost performance without redundancy. RAID 5, on the other hand, is often more appropriate for redundant storage applications, but it does not offer the performance of RAID 0.

Here is a series of tips to help you decipher RAID levels and how to get more use out of your RAID disk arrays in general.

Cut Through Vendor Mumbo-Jumbo

When it comes to RAID, the key is to determine which RAID configuration will work best with the specific requirements of the hardware and, more importantly, the applications in place in your data center, says Brad Kowal, an IT manager for Shands HealthCare in Florida. Unfortunately, a vendor is not necessarily going to be able to recommend the best RAID flavor.

"Databases, for example, are the most temperamental systems to deal with when it comes to configuring a RAID design. Application vendors do not want to get down in the weeds with companies when it comes to their backend database storage RAID design," Kowal says. "Most will quote a best practices design, but when it comes to the actual tuning of the database performance as it relates to RAID disks, spindles, etc., most application vendors will tell you to consult your SAN storage or other storage supplier for tuning your disk I/O."

A sufficiently knowledgeable staff member or even a vendor-neutral third-party consultant is thus required to determine the best RAID fit, rather than relying completely on a vendor's advice.

"In many cases, software manufacturers will provide recommendations for the RAID level that works best for their product," says Zack Wojenski, the data center manager for Hosted Solutions (www.hostedsolutions.com).

"The essential mission at hand is thus to assess the different offerings from various vendors and to determine the RAID level that will help you achieve your storage goals," says Paul Morgan, a product marketing manager for the StorageWorks division of HP.

"Along with the RAID decision, you want to know the type of drives you will use (performance-optimized or capacity-optimized), the useable storage capacity you need to have after your RAID solution is implemented, and your data growth rates so you can plan for increased capacity," Morgan says.

BONUS TIPS

■ **Get the plan right.** A good way to lower costs is to make sure that you're using the most efficient RAID level for your application and sizing your disk accordingly, says Zack Wojenski, data center manager for Hosted Solutions (www.hostedsolutions.com). "Undersizing or oversizing disk capacity is a common and costly mistake," Wojenski says.

■ **Think in the abstract.** It is important to realize that a RAID storage system "introduces a layer of abstraction," says Scott Hirsch, a solutions architect at Forsythe (www.forsythe.com). "A RAID 'disk' is no longer a physical entity but is a logical entity or a logical unit number," Hirsch says. "If the RAID storage will be shared, there will be issues of access control, networking, and management of capacity and performance among competing host demands."

Weigh The Costs

The cost factors associated with deciding which RAID configuration best meets your needs cannot be downplayed. Most data centers obviously do not have carte blanche to invest in a solution that will offer the best performance and the greatest redundancy possible at the same time, so tradeoffs are often involved.

In the healthcare industry, for example, Kowal notes that disk usage continues to almost double each year, often making it difficult to keep up with the costs of extra capacity.

"Storage of healthcare records, data retention times, size of data, and types of data (radiology images, etc.) are causing explosive storage growth in health care," Kowal says. "Capital budgets find it hard to keep up with the funding of more and more storage, and, of course, with storage comes the discussion of RAID configuration."

So the decision to use RAID 5 instead of RAID 10 "comes at a capital price," Kowal says. "If you have unlimited funding, you can pick performance and redundancy over the cost of implementing your storage design. But that's not the real world, where the RAID or storage design as it relates to redundancy and performance must be balanced against what the organization can afford," he continues. "However, I will always choose data redundancy over performance when the performance impact is acceptable. Disks fail all the time, so don't risk data loss with a bad RAID design or you will get bit."

Don't Use RAID For Backups

It is tempting to think that a RAID storage system can serve as a backup alternative. After all, a RAID system that is part of a storage solution for workstations or servers can protect against data loss in the

estimate that only 10% of organizations have deployed it. In addition, most view it only as an aid to a backup solution. However, it can also play an important role in reducing the size of the email archive.

"Why continue to back up email systems that just aren't changing anymore?" says Rob Emsley, senior director of product marketing at EMC (www.emc.com). "Archive much of it and only back up the changing data."

Before thinking about the redesign of backup and recovery processes, he advocates archiving. By isolating unchanging data and eliminating multiple copies of data within it, archiving size is reduced significantly.

Simplest Tip:

Implement Stubbing

Storage of email on a messaging server has been a critical issue since email applications were first deployed. One way to save space is to implement email archiving that employs a process called "stubbing." This is an archiving mechanism that gets rid of attachments on emails and replaces them with a stub file that enables the entire email to be recalled from the archive on demand.

"Through stubbing, users can retain access to their email and attachments, and Exchange storage can be cut by as much as 85%," says Scott Whitney, vice president of product management at Mimosa Systems (www.mimosasystems.com).

This approach works well for smaller companies. But once the email database swells beyond a certain point, performance issues may result over time. Whitney recommends that the practice is abandoned once any slowdowns in data retrieval become apparent to end users.

Best Tip:

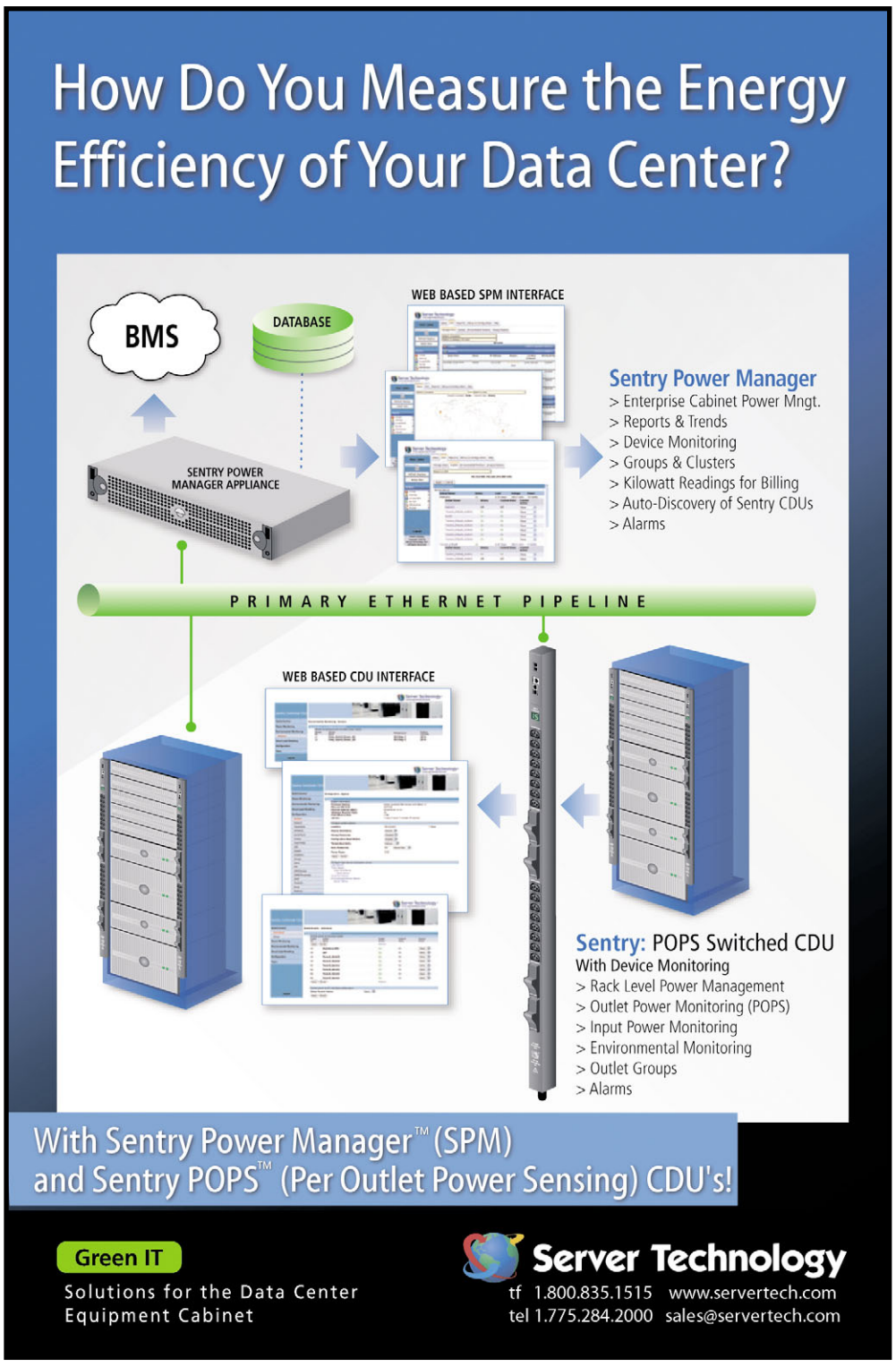
Simplify Archiving Policies

Most archiving systems have sophisticated policy engines that make it possible to specify all manner of parameters for archiving, data retention, and purging; however, the policies can easily become overly complex. Molly Rector, vice president of product management and marketing at Spectra Logic (www.spectralogic.com), recommends keeping policies as simple and as uniform as possible. Doing so helps avoid unforeseen circumstances such as entire departments having no archived data or information being purged well before its due date.

"Have policies on what the requirements are for the time frame of email retrieval, then store the emails on the least expensive media available that will meet these requirements," says Rector.

She points out that poor policy setting can lead to an increase in the use of expensive storage space. As such, SMEs should set clear policies to move emails off to tape or lower-cost disk.

"Tape has become a very affordable medium for storing archive data," says Rector. "Use best practices and keep one tape copy for online storage and reference. Use an email archive package that can stream a second copy of the archive to a second tape [and] store this tape offline or, ideally, offsite."



event of a disk failure. However, significant data-loss risks still remain, regardless of which RAID level is in place. For example, software errors can damage data on the RAID server; a controller can become damaged; or a fire, flood, or another catastrophic event can destroy the server itself.

"RAID is not a replacement for backups," says John Matzek, co-chief executive officer of Logic IT Consulting (www.logicitc.com). "Even if you have redundant disks, things can happen."

Monitor The Arrays

Regardless of how reliable your RAID system is once it is up and running, many things can go wrong. Using monitoring software to keep tabs on performance and potential problems should thus be a part of the management of RAID storage systems.

"Unfortunately, monitoring is something that gets overlooked a lot," Matzek says.

In the case of one data center, Matzek says no one knew that a RAID 5 SAN server was running with a defective disk, which meant that the server no longer had disk-redundancy protection.

"I saw that there was a red light on their server. I said, 'You have to replace one of your disks,' and they were like 'oh, really?'" Matzek says. "The server was running just fine, but there was no one who was monitoring it. It happens a lot."

Best Tip:

Tighten Up Monitoring

Closely monitoring the system becomes especially critical when moving from physical, direct-attached storage to a RAID configuration, especially networked RAID, says Scott Hirsch, a solutions architect at Forsythe (www.forsythe.com). "Access control [represents] a new dimension [when using RAID]. Tools that open up the 'black box' and provide an end-to-end view of your storage environment are helpful," Hirsch says.

Most Practical Tip:

Put Hot-Swap RAID In Place

When a disk crashes, what then? You can either spend a long time turning everything off, replacing the defective disk, and then rebooting the system, or with a hot-swap solution, you can replace the disk while everything remains running. "Hot-swaps are just a little more expensive but are great for larger data centers and even small offices," says John Matzek, co-chief executive officer of Logic IT Consulting (www.logicitc.com). "It is especially practical for an administrator because shutting down a server and installing a new disk might take an hour vs. spending just a few minutes to complete the task with a hot-swap drive."

News

Andreessen Takes Seat On HP's Board

HP announced that Marc Andreessen, best known for developing the Mosaic Web browser, has joined HP's board of directors. Andreessen is also well-known for being the co-founder of Netscape and co-founder and chairman of Ning. He currently is also the co-founder and general partner of the Andreessen Horowitz venture capital firm. Andreessen, who already holds seats on eBay and Facebook's boards, will join HP's board immediately, bringing the board's total to 11 members. "Marc Andreessen is a software pioneer whose leadership has helped shape the Internet," says HP Chairman and CEO Mark Hurd. "Marc's entrepreneurial background and industry expertise will be a welcome addition to the HP board of directors." Andreessen at one time served as AOL's CTO.

Indian Outsourcing Shows Stability In Recession

India's IT and business services outsourcing market is expected to expand by 500% and reach $225 billion in sales by the year 2020, according to India's National Association of Software and Services Companies, or NASSCOM. Enterprises turn to outsourcing for multiple reasons, including cost savings, improving productivity, and global expansion. According to NASSCOM, for the 2008-09 fiscal year, India's outsourcing sales reached $58.8 billion, $46.3 billion of which came from sales to foreign customers. The Indian trade body expects that exports will increase by up to 7% in the current fiscal year, but more robust gains are expected later.

LCD Panel Shipments Up

Manufacturers of LCD panels have benefitted from an upswing in sales and shipments, according to research firm Displaybank. For August, LCD panel shipments reached 50.18 million units, which is an increase of 27.1% from the same time last year. According to iSuppli, the growth was 26.2% year-over-year, and shipments reached 47.1 million units. Displaybank says Samsung Electronics maintained its top spot with 27% of the market, and LG Display followed with a 24% market share.

Internet Traffic On The Upswing

The economic downturn has not negatively affected Web browsing habits, according to the latest research from Telegeography that looks at international between-country Internet traffic. The firm says that between the third quarter of 2008 and the third quarter of this year, Internet traffic increased 79%, compared to 61% the previous year. The study also reveals that international Web traffic growth was the strongest in emerging markets, including Eastern Europe, South Asia, and the Middle East, but traffic between the United States and Canada also remained healthy, growing 59%. Because of the steep climb in traffic, carriers internationally have had to boost their infrastructures to keep up. Telegeography also reports that service providers have been boosting network capacities by 60% or more since 2007.

SERVERS & STORAGE

The Power Of Partitioning

Reap Benefits From Seemingly Spare Storage

by Christian Perry

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A SEGMENT OF STORAGE in almost every data center skirts by every day without doing much work. But through the use of partitioning, it's possible to get that storage back to work and keep it there.

"Properly partitioned hard disks will allow the data center to maximize its storage investments by reallocating unused disk space and consolidating data, resulting in the need to purchase less new storage," says Jim Thomas, technical services manager for Paragon Software Group (www.paragon-software.com). "Increased system performance can also be noticed through defragmentation of partition contents and the MFT [Master File Table]."

Division Lesson

At its core, partitioning is the process of dividing hard drives into separate storage areas, or partitions, to make use of previously unused disk space. According to Curtis Breville, data storage evangelist for Crossroads Systems (www.crossroads.com), partitioning was originally designed to dedicate part of a disk drive to a specific purpose to allow the data to be physically close together and speed up access to data on a device that used random-access searching.

"Partitioning also allowed for better use of disk space and kept one application from taking away space needed by another. With astute planning and accurate growth prediction, each application would have the right amount of storage, and there would be less wasted disk [space]," Breville says.

Partitioning's Payback

The benefits delivered by partitioning are extensive, particularly as data centers look to extract every last penny of value from their existing equipment. Gary Thome, director of strategy and architecture for HP's Infrastructure Software and Blades, and James Wilson, product manager for HP StorageWorks (www.hp.com), identify some of the benefits of partitioning in data centers.

- Allows customers to maximize resource utilization and consequently reduce infrastructure acquisition costs
- Permits quick reassignment of compute and storage to applications that need them the most
- Cuts server sprawl, reducing the need for added data center floor space
- Makes backup and recovery faster and more reliable
- Lets customers test and deploy new applications quickly and easily
- Facilitates improved availability for non-mission-critical applications
- Provides increased security for data and resources
- Limits the scope of administrator errors to a single partition

Today's flexible partitioning technologies continue to build on that performance-enhancing tradition, delivering automated and unattended operations, RAID support, dynamic disk support, Windows-based tools for on-the-fly partitioning, and even bootable recovery media to enable partitioning operations while systems are offline. Also relatively new is thin provisioning, which allows partitioning without the need to physically allocate storage at initial setup.

Partition Plan

Data center managers who neglect to implement partitioning for fear of disrupting delicate system environments might be pleased to learn that partitioning can occur while systems are online. However, before moving ahead with partitioning, experts recommend some basic planning procedures to ensure that the technology is working to its full potential.

"Typically, after the goals and business case for partitioning have been established, history performance data on existing servers and applications is collected to assist in the planning process as well as information on the importance of each application to the business," explains Gary Thome, director of strategy and architecture for Infrastructure Software and Blades at HP (www.hp.com). "Architectures and partitioning software are chosen based on the goals of the project, along with plans for management, high availability and disaster recovery, and backup and security procedures."

Thome also recommends determining the metrics the data center uses (or will use) to measure success. For example, is IT judged based on response time to end users? On percent of unplanned downtime? On costs of capital expenditures or of the power bill? Also, data centers planning to implement partitioning should gather utilization data from their existing servers, storage, and applications, Thome says.

> Data center managers who neglect to implement partitioning for fear of disrupting delicate system environments might be pleased to learn that partitioning can occur while systems are online.

The actual process of partitioning new or existing drives is surprisingly simple. "Most partitioning utilities show each hard drive in the system with graphic representation of the partition layout. After installing the partitioning software, an operation such as resizing partitions is usually as easy as dragging the border of a partition to the desired size or entering the desired size of the partition in numerical form, before allowing the application to carry out the partitioning operations behind the scenes," Paragon's Thomas says.

Key Points

- Partitioning can help data centers deploy previously unused storage space for applications, testing, and other tasks by dividing hard drives into separate storage areas.
- Although the actual partitioning process is simple, experts recommend planning before conducting partitioning sessions to determine the best use for the technology and prepare for potential changes.
- Partitioning can force drive letter assignment changes, conflict with existing file system problems, and cause other issues, so data center personnel should expect the possibility of some problems with the technology.

Rolling partitioning into production—that is, moving programs and data into a partitioned environment—can be accomplished with tools that automate the transfer of applications from physical servers to virtual servers, Thome says. From there, data centers can use ongoing monitoring and capacity planning to ensure the optimal distribution of workload and resources.

Tread Carefully

Although partitioning is generally a safe process, it's not without pitfalls. For example, Thomas warns that when booting a server from recovery media, drive letter assignments might display differently than how they appeared in the host operating system. Further, he warns that file system errors and bad sectors can cause numerous problems, so it's wise to check for physical errors and file system errors before creating or modifying partitions.

James Wilson, product manager for HP StorageWorks, says that another concern with storage cache partitioning is that the time required to move cache is variable and does not address short-term hot spots or sudden changes in workload. Further, the cache being moved is not available to any partition from the start of the move until the cache is reassigned to the new partition.

Despite these potential drawbacks, partitioning is here to stay in data center environments as an effective method for increasing operational efficiency. "Partitioning is like cutting a child's birthday cake," Thome says. "As long as you plan ahead and measure carefully, everybody is going to be happy." P

TIPS & ADVICE

Skype Use In The Enterprise

The Internet's Favorite Phone System Can Centralize Account Management, Improve Integration & Enable Mobility

by Kurt Marko

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First instant messaging, then blogs, followed by Facebook and Twitter; it seems the Internet's social communication services are steadily invading the staid world of enterprise IT.

Don't look now, but Skype, the pioneering voice, video, and messaging application, is next—at least if its devoted users and company executives have anything to say about it. Skype has nearly half a billion registered users, and companies can rest assured many of their customers and employees are among them. Despite IT resistance, IDC Research Analyst Rebecca Swenson says Skype has already snuck in the back door of many enterprises and is widely used at work—a situation that is leading many firms to officially incorporate Skype as a supported service.

Skype got its start as a virtual Internet phone company and owes much of its growth to the fact that users can make free calls to other Skype contacts regardless of their location. It's one of the oldest VoIP services, with mature technology and a demonstrable record of excellent call quality. As VoIP becomes increasingly commodified, Skype has added features such as video, chat, SMS messaging, screen sharing, and file transfer that have morphed it into a rich communications platform, one that Matt Jordan, enterprise business development manager at Skype (www.skype.com) terms "free, on-demand, unified communications."

Yet Skype has had trouble shaking its consumer roots and getting enterprise IT departments to take it seriously. Their trepidation stems from Skype's proprietary, undocumented P2P (peer-to-peer) transport protocol that leaves many IT managers concerned about privacy, security, and network usage. Perhaps of bigger concern to enterprises, according to Info-Tech Senior Research Analyst Jayanth Angl, is that Skype lacks service-level guarantees and business customer support.

Skype's Business Offerings

While Skype is unlikely to change its protocol or P2P architecture to appease IT skeptics, it has added several products targeted directly at the enterprise, particularly SMEs. These include Skype for Business, Skype for Asterisk (an open-source PBX commercially marketed and supported by Digium), Skype for SIP (the standard VoIP signaling protocol), and Skype Mobile.

Skype for Business is a Web-based control panel that allows IT to centrally manage Skype accounts, phone numbers, and Skype credits. And Skype's latest forays into the business world include Skype for SIP and Skype for Asterisk, which are aimed at integration with existing PBXes.

Skype for mobile devices, a new and somewhat controversial service, is something Angl says SMEs may find particularly useful. Skype currently provides clients for Windows Mobile phones and the iPhone, with plans for Android, BlackBerry, and Java-based devices in the works, according to Angl. The controversy arises over support for Skype on 3G networks, which many carriers disable because it essentially uses a mobile data connection to bypass the carrier's voice network and get "free" voice minutes.

Usage Scenarios

Angl sees a number of favorable scenarios for Skype in the enterprise. The most obvious is as an alternative voice trunk to reduce long-distance charges. And Skype's mobile solution might be another potential cost-saver for companies with remote or traveling employees. Jordan notes that enterprises spend about 30% of their telecom budgets on wireless services and sees the potential for substantial savings if companies teach employees to use Skype where possible when on the road.

The native Skype application is a pretty rich collaboration tool, which could serve as a cheap and easy videoconferencing and messaging solution for SMEs with remote and mobile employees. Swensen agrees that Skype provides a compelling UC foundation. "Skype brings to the table not only valuable cost savings but also an innovative way of delivering communications."

Web integration using the SIP gateway is another promising business application, according to Angl, and is particularly suited for pre-sales or customer support sites. As Jordan puts it, "click-to-call is like having an 800 number on the Internet," which he notes has been quite popular in the travel and hospitality industry.

Final Thoughts

Although Skype continues to add features such as video calls, SMS messaging, and call forwarding, its drawing power remains price, which is free when staying within the Skype ecosystem. Whether coincidental or not, the past year's economic turmoil has played into Skype's plans to extend its franchise to the enterprise. Yet accessing the Skype network need not require deploying the Skype client. As Angl points out, "While the desktop application poses similar security risks to other consumer messaging tools, small business IT leaders should understand the alternative approaches to accessing Skype's low-cost calling services." P

> Although Skype continues to add features such as video calls, SMS messaging, and call forwarding, its drawing power remains price, which is free when staying within the Skype ecosystem.

Key Points

- Skype, the Internet phone service, is rapidly expanding onto enterprise turf with business products designed to consolidate Skype user management and billing and integrate the Skype service with VoIP PBXes.
- While Skype's rates for calls to domestic phone numbers aren't significantly lower than those from conventional carriers, SMEs with substantial overseas calling may find significant savings by using Skype for international calls.
- Skype's mobile client, currently available on the iPhone and Window Mobile phones, allows traveling employees to stretch cell plan minutes by using Skype over Wi-Fi networks.

Skype Services For Different Enterprise Constituencies

Skype brings to the table a number of different services for the business environment that address the needs of the user, the administrator, and the IT manager.

For the User: The Skype portal offers a number of modes of communication for the business user: IM/chat, voice, video, conferencing, file transfer, and desktop sharing. In addition, Skype users have the ability to record calls and fax (with help from Pamela, an add-on tool) and apply click-to-call buttons to their email and/or Web site.

For the Administrator: Skype has built administrative tools into its solution that make it easier for enterprises to oversee employee Skype use and billing. Administrators can buy Skype credit and delegate to users as they see fit.

For the IT Manager: Thanks to the new Skype for Asterisk and Skype for SIP services, as well as Skype gateways that tie into TDM PBXs, IT managers can take advantage of the cost savings of Skype through the business' existing phone system. Skype can now be used to save money on long distance calls, such as those generated from a call center.

Source: "Recognizing Value: Communication as a Service for the Enterprise"; IDC White Paper, sponsored by Skype; by Rebecca Swensen; July 2009.

News

Websense Report Reveals Security Threats

According to Websense's "State of Internet Security" study covering the first six months of this year, Internet attackers are concentrating on Web 2.0 vulnerabilities on blogs, message boards, and chat rooms. The volume of malicious Web sites has increased by 233% in the previous six months when compared to the last six months of 2008. When compared to the first six months of 2008, this number has risen 671%. Out of the top 100 most-visited Web properties, most were categorized as social networking or search-based sites. Spam and malicious links account for about 95% of comments in blogs, message boards, and chat rooms, the study notes.

ICANN Asked To Hold Off On Generic TLDs

ICANN (the Internet Corporation for Assigned Names and Numbers) has been encouraged by members of a subcommittee of the U.S. House of Representatives Judiciary Committee to reconsider plans to provide an unlimited amount of new gTLDs (generic top-level domains). Members of the subcommittee say there are too many trademark protection and other issues yet to be resolved. ICANN intends to sell new gTLDs that would compete with TLDs such as .com and .org.

Intel Continues To Dominate CPU Market Share

Intel netted 80.6% of worldwide processor revenue during the second quarter, according to recent data from iSuppli. This represents a 1.5% increase from the first quarter and a 1.4% increase from the same period a year ago. According to iSuppli, Intel's second-quarter market share is the largest it has claimed since the second quarter of 2005, when it accounted for 82.4% of global revenue. iSuppli's Matthew Wilkins says, "Intel benefited as the global PC market took a first small step toward recovery in the second quarter, with global shipments rising by 1% from the first quarter." Despite the increases, Intel lost revenue during the second quarter when compared to the previous year, Wilkins says. AMD's market share was down 0.4% compared to a year ago. The company's share also declined by 1.4% when compared to the first quarter. Propelling Intel's second-quarter gain was a 13% year-over-year rise in revenue stemming from its notebook business, iSuppli reports. Desktop PC chip sales, as well as those for entry-level servers, fell.

IBM Unveils New Memory Technology

IBM introduced a prototype of eDRAM, a new memory technology that is embedded onto the processor die as opposed to DRAM modules. The technology was developed to work with new 32nm processor technology. The company states that eDRAM uses silicon-on-insulator technology to shield the memory from electronic leakage to improve performance and reduce energy consumption.

SERVERS & STORAGE

Reining In The Storage Budget

IT Managers Must Proactively Manage Their Storage Resources & Policies

by Sue Hildreth

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Even small companies can wind up spending big bucks on storage capacity, especially if they don't have a storage plan, policies, or tools to monitor and forecast capacity demands. With storage demands rising each year, managing a storage budget and environment requires an understanding of the storage needs of the organization and a detailed prioritization of storage options for different types of content.

When the National Cowboy & Western Heritage Museum in Oklahoma City hit a whopping terabyte of stored content in just nine months of moving to a new online storage system, the IT staff sat down and evaluated some of the less expensive storage options offered by the service provider.

"We sat down and mapped out a plan to move to a tiered storage arrangement," says Brian Garrison, an information technology employee at the museum. "We try to get large files off of the online tier and onto the nearline tier as quickly as possible."

Key Points

- Monitor storage usage to pinpoint problems and forecast growth.
- Optimize storage capacity with deduplication, automated tiering, thin provisioning, and other technologies.
- Calculate a per-gigabyte price for storage and charge departments for their storage usage.

Common Difficulty

The Cowboy Museum's difficulty in keeping storage capacity within budget is a fairly common one for CIOs, according to statistics from TheInfoPro, an IT research firm. TheInfoPro's 2009 Storage Study found that the No. 1 priority of the 150 IT executives surveyed was managing storage growth, followed by capacity forecasting and storage reporting.

Rob Latimer, principal consultant at GlassHouse Technologies, an IT consulting firm, agrees that a majority of companies are experiencing rapid growth in storage demand and struggling to manage that growth.

"We find, especially in the midsized to larger companies, growth rates of 20 to 50%, compounded annually in the storage footprint, or the raw number of gigabytes that are on the floor," says Latimer.

Strategies For Managing Storage Demand

Unexpected surges in storage demand can easily overrun an IT department's storage budget and create related costs such as network and maintenance expenses. The keys to preventing storage demands from overwhelming the budget include good assessment and tracking of storage usage, prioritizing content for different price levels of storage, and using available technologies such as deduplication.

Here are a few ways you can get started managing storage demand and, as a result, better managing your storage budget:

Evaluate storage usage. The central problem, says Latimer, is that IT lacks both a storage policy and the tools to monitor usage of storage. "If the DBA is asking for more space, and IT has the tools to see what they're using, they may find out that the DBAs are only using 10 or 15% of their capacity," says Latimer. "The tools for managing capacity and understanding utilization are critical."

For a big-picture look at the storage situation, a consultant can provide an in-depth analysis of your storage structure, usage, problems, and possible solutions for a fee that may run a few thousand dollars to tens of thousands of dollars.

Once an IT manager understands how storage resources are being used, she can then develop policies for how different

Storage Etiquette For End Users

If you want end users to help in keeping storage demand under control, you need to communicate how you want them to handle their files. Susan Adams, assistant director of development at the National Cowboy & Western Heritage Museum, says museum employees try to follow four basic rules of the road.

1. Instead of attaching a file to an email, consider sending a link to the file instead.
2. Instead of copying a file from someone's folder, copy the link to the original.
3. Don't store personal music, photographs, or videos on the company file servers.
4. Put files that don't need to be backed up in a separate network folder.

SERVERS & STORAGE

Is Disaster Recovery Outdated?

Disaster Prevention Challenges The Idea Of Disaster Recovery

by John Brandon

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In a data center, keeping track of buzzwords is a challenge. The age-old concept of disaster recovery—where a company has a contingency plan to continue operations, restore data, and rebuild infrastructure after a catastrophic event—is changing. New concepts of business continuity and disaster prevention are emerging. In some ways, it's semantics: The shared idea behind disaster prevention and disaster recovery is that a company needs to maintain IT services just as effectively as the electricity and water in a building.

Yet, for an SME, a comprehensive disaster recovery plan is often an expensive and complex endeavor. And, in the reality of day-to-day business, it's often overlooked. Because disaster recovery has matured as a concept in IT and now involves prevention, backups, security strategies, and cloud services, there are new questions that IT must ask about disaster recovery plans. For instance, should a small company maintain a complete colocation facility that can continue operations after a disaster? Should a data center archive all data in any form—including instant messaging chats? And once a company has embraced cloud services—which provide contingency plans of their own—is disaster recovery even necessary?

> "In this realm of tightened budget times, it is more important than ever to have not only a disaster recovery plan but also a business continuity plan. Disaster recovery is now viewed as part of business continuity."
>
> *-CA's Eric Pitcher*

Of course, no company should forego disaster recovery plans altogether. The short answer to the question of whether disaster recovery is outdated is no—there is an even greater need. However, the concept of disaster recovery now involves overall business continuity and disaster prevention, and the strategies are changing to even include security plans.

"In this realm of tightened budget times, it is more important than ever to have not only a disaster recovery plan but also a business continuity plan," says Eric Pitcher, vice president for technology strategy at CA (www.ca.com). "Disaster recovery is now viewed as part of business continuity."

Key Points

- Disaster recovery is now a part of overall business continuity.
- A company needs to maintain IT services just as effectively as the electricity and water in a building.
- Disaster recovery will always be necessary, especially for catastrophic events.

Adding Disaster Prevention

One major change in recent years is that SMEs are adding disaster prevention to continuity plans. The idea is to implement email and SMS alert systems; server monitoring devices; fire suppression technologies that do not damage IT equipment; and other strategies that lessen the impact of a disaster or provide a way for IT to avoid the long-term effects of a major disaster, security breach, equipment downtime, or any break in services. In part, disaster prevention is a way for data center managers to continue IT services for a more likely disaster (such as a power outage) and develop a recovery strategy for major disasters.

Disaster prevention products are designed for data center racks and can send email alerts if equipment reaches a certain temperature or the humidity in the room rises. With these disaster prevention products, IT staff can react by implementing a more immediate response such as spot-cooling or move to full disaster recovery mode. Of course, for some disasters, such as a hurricane or major flood, an alert system will be too little, too

types of content should be handled and implement constraints on user demands, such as chargebacks for excess storage demands by a department or setting individual limits on how much end users can store online.

Optimize and prioritize. Storage optimization techniques such as single instancing, which weeds out duplicate files and replaces them with pointers to a single saved version; data deduplication, which does what single instancing does but on the sub-file level; and compression technologies can all help reduce the total storage volume.

Automatic tiering, in which files are moved from real-time storage to other tiers, is another way to optimize the storage budget. Jeff Cato, vice president of marketing and strategic partnerships at CoreVault (www.corevault.com), says, "Your largest set of data will always be your older, static data. Archiving it offline can reduce costs 30 to 40%."

In many cases, the second-best storage isn't much worse than the best real-time service, and end users can often get by without instantaneous recovery of a lost file. For very old files, offline archival onto tape can save another 35% in costs while still retaining the ability to recover the file.

In addition, consider thin provisioning, which is a sort of "just-in-time" technology that optimizes storage by allowing applications to draw extra space as needed. This puts more storage into play compared to the traditional method of allocating large blocks of storage for each application, even though that application might never need the space, while other applications need more than their original allocation.

Buy storage-as-a-service. Outsourcing is another way to manage budget problems. It's easier to budget for storage expenditures in an outsourcing arrangement, where the main cost is a flat monthly fee. The storage service provider takes care of the hardware, software, and maintenance issues and charges the customer a fee based on the amount and type of storage needed.

Put a price on storage options. Don't keep users in the dark as to how much their storage is costing the company. Do the math and hang a price tag on the different types of storage to encourage department managers and others to select the lowest-cost, most appropriate storage option.

How do you price your storage? According to Latimer, it's a fairly simple matter of adding up the hardware, software, and people costs that go into maintaining the storage solution and dividing by the total number of gigabytes.

A fully burdened price should include hardware, software, installation services, maintenance, and operations costs per square foot of the storage area, along with the cost of office space associated with storage-related staff, including the staffers' pay and benefits. Any outside services related to storage should also be thrown into the mix, such as for archiving or online storage.

User education. Talking to end users about their storage practices helps IT understand where and why things might be getting out of control. At the National Cowboy & Western Heritage Museum, for example, the problems centered on the publications department, which often copied and shared images and edited the graphics files and renamed them with each new version. That led to dozens of similar image files, most of which were no longer needed. By learning where the problems were, IT could decide how to curb the growth and also set better policies for end users. At the museum, employees are asked to put temporary or less important files in a folder that is not backed up.

In many cases, the second-best storage isn't much worse than the best real-time service, and end users can often get by without instantaneous recovery of a lost file.

late. For smaller companies, data centers are often in the same location as the business itself, so a catastrophic event can be devastating, and an alert system won't help.

Costs for prevention—though static—can vary depending on the type of prevention. For example, the alert systems for server racks cost as little as $100 and yet provide a good continuity benefit for an SME. Other prevention measures—including most data center colocations—are more costly.

"Prevention from power failure can be as simple as an uninterruptible power supply or as complex as tying into two different power grids," says Ray Lucchesi, a consultant with Silverton Consulting (www.silvertonconsulting.com). "Similar concerns exist to deal with Internet access; having at least two or three different access points to the Internet make a lot of sense."

Even with these variations in costs, prevention costs are more predetermined—you will know the costs up front instead of figuring out recovery costs after an event, even with the best plans. "The costs of prevention are quantifiable and vary based upon a specific goal and the strategy used to implement it," says Anthony Wanger, president and founder of IO Data Centers Systems (www.iodatacenters.com). "On the other hand, recovery is difficult to quantify and tends to occur in tandem with other challenges. For example, the lack of resources if an office building burns down and at that point one needs to recover not only IT operations but also office, phone, HR, and other challenges at the same time."

Will Prevention Replace Recovery?

One question one must ask in the context of disaster recovery and disaster prevention is, as IT evolves and services change, will disaster recovery plans become unnecessary? This is a particularly important question in light of cloud computing and the move to online applications.

Jim Thomas, technical services manager for Paragon Software (www.paragon-software.com), a company that makes drive partitioning and backup software, says disaster recovery can depend greatly on your geographic location. For example, no amount of prevention can help with a widespread disaster. Because of that, disaster recovery will always be part of the equation.

"Managers can rely on prevention as long as a large geographic area is not affected by disaster," says Thomas. "As soon as a major disaster disrupts local service, there is no possibility to recover from onsite resources, and the ability to retrieve offsite backups is delayed, prevention is useless, and disaster recovery needs to be implemented. Failure to have a continuity plan can only lead to confusion during a disastrous event and the all too common possibility that the business will fail to recover."

Several emerging technologies in business continuity planning will also change the DR landscape. For example, Pitcher explained that massive RAID arrays were once the purview of only a large enterprise, but now a multiterabyte array with full redundancy can cost only $1,200 and is easier to manage than just a few years ago, so the technology could become part of an SME's contingency plans.

Another evolution in continuity planning is that the software monitoring servers, especially applications servers that are most important for business operations, is becoming more intelligent and proactive, providing some of the low-level tasks that help IT managers make decisions about continuity. For instance, software can help determine if a server is slowing down gradually and affecting tape backups or offer help with features for automatically offloading email services to the cloud if a server fails outright.

In the end, business continuity planning will always be a complex process involving not just recovery and prevention, but security, government compliance, and business process. It is one that starts with a simple offsite storage practice, and continues into the realm of cloud services and email alerts on server cabinets. The one constant: Plans should evolve apace with the technology changes.

Disaster Recovery vs. Prevention

Disaster Recovery:

- Restores data to its original state
- Can include colocation of data center
- Critical to business continuity
- SMEs must do DR because prevention is not a given
- Expensive for a comprehensive plan

Disaster Prevention:

- Alerts staff about data center problems
- Offsets minor data center problems
- Easier to predict and control
- Less costly than disaster recovery
- Encourages management and backup

News

Cloud Attack Study Shows Possibility Of Security Threats

Cloud computing service providers, such as Amazon's EC2 or Microsoft's Azure, let you outsource computing resources on demand. However, a recent report on cloud attacks by researchers at MIT and the University of California, San Diego found the cloud infrastructure could also introduce new security threats. In particular, the study notes how third-party cloud providers may assign multiple VMs, or virtual machines, to the same physical server, which may allow other companies to penetrate the isolation between VMs.

The report says the attack would require two steps: the placement of an adversary on the same physical machine as the target customer and the extraction of confidential information via a cross-VM attack. The researchers focused on side-channel attacks that could allow the hacker to remove RSA and AES secret keys and coarse-gained attacks that measure burst timing, such as cross-VM keystroke monitoring.

Shared Physical Resources

In the report's threat model, an attacker would manipulate shared physical resources, such as the CPU cache, branch target buffers, or network queues. By probing the network, the attacker could use DNS resolution queries to discover the external name of an instance and determine the internal IP address of an instance. Once an attack locates the internal IPs, it may be able to check the residence and map the network traffic.

There were a few methods to perform co-residence checks, including matching Dom0 (Domain0) IP address, watching small packet round-trip time, and seeing numerically close internal IP addresses. The researchers ran three independent trials, which overall generated 31 pairs of instances where the Dom0 IPs were equal. In the same trials, the internal IP addresses were within seven of each other, and of the 31 pairs, 12 were "repeats," which was a pair from a later round that had the same Dom0 as a pair from another trial.

The report suggests that cloud providers need to conceal the internal structures of their services, as well as the placement policy, to complicate attempts to place a VM on the same physical machine. Alternatively, an enterprise might insist on using physical machines that feature only the enterprise's VMs. In exchange, you may need to pay the opportunity costs for leaving some VMs underutilized. The researchers indicate that insisting on using physical machines with only the company's VM was the only complete solution to the problem and likely will be demanded by enterprises with high privacy requirements.

by Nathan Lake

News

Pre Softens Harsh Palm Results

Palm's first fiscal quarter 2010 wasn't a pleasant one, but its bad news is tempered by an expected boost from its new Pre smartphone. The company posted a net loss of $164.5 million, or $1.17 per share. That was four times greater than the losses Palm charted a year ago. The company spent about $45 million of its cash reserves during the quarter but still has about $212 million on hand. In the coming quarter, Palm expects a reasonably beneficial effect from its Pre and the webOS operating system the phone runs.

Microsoft Assimilates ERP Offerings

Microsoft plans to bulk up its Dynamics AX ERP product with technology it has acquired through the purchase of four solutions from various companies. The firm aims to provide lower TCO and tangible benefits to its user base with the new enterprise resource planning additions, it said in a statement. The new acquisitions include retail components from LS Retail EHF and To-Increase Denmark A/S, a multifaceted management service from Computer Generated Solutions, and process manufacturing technology from Fullscope.

Intel, European Commission Battle Over Antitrust Evidence

The European Commission is accusing Intel of participating in illegal deals made with Acer, Dell, HP, Lenovo, and NEC. In its verdict, the EC says that numerous email conversations between Intel and computer manufacturers reveal the guilty parties. Intel responded by saying that the EC has mishandled its allegations by being too selective with evidence against the computer chip maker. Intel claims that the evidence against it is one-sided and that the EC does not fully understand Intel's competition with AMD.

U.S. Still Tops In IT Competitiveness Index

According to a recent annual study by the Business Software Alliance, the United States still ranks No. 1 when it comes to IT competitiveness. The U.S. IT industry is buoyed by an abundance of qualified personnel and solid research and development. Additionally, the United States has a strong legal system in which IT can thrive. However, the study points out several areas the United States needs to address, including infrastructure (much of the country is still without broadband Internet access) and the country's immigration restrictions, which are viewed as being too rigid. The other countries in the top 10 include Finland, Sweden, Canada, the Netherlands, the UK, Australia, Denmark, Singapore, and Norway.

PHYSICAL INFRASTRUCTURE

Shock To The System

Prevent Electrical Issues In The Data Center

by Christian Perry

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As the lifeblood of every data center, electricity holds a value beyond compare for facilities personnel tasked with keeping hardware up and running. But because electricity touches almost every data center element, even the smallest electrical problems can cause downtime, if not outright chaos. Further, data center managers who aren't necessarily trained in electrical engineering are nonetheless often forced to tackle problems to prevent major outages.

"The data center electrical infrastructure is often overlooked by building facilities departments," says James Stark, design and build manager for Electronic Environments (www.eecnet.com). "This is particularly true in small to medium-sized companies. The unfortunate result is that these systems tend to be neglected and unchecked until a failure identifies a deficiency. IT departments and data center managers are being put in a position to act as facilities managers for the data center."

The core competencies of IT personnel generally don't include the experience and skill sets required to handle electrical problems, Stark adds. However, with a general understanding of common electrical issues and how to handle them, IT personnel have a better chance of subverting disaster when those issues arise.

Move Power Where Needed

Even with the best intentions toward constant uptime in mind, many data centers inevitably fall prey to electrical incidents that can result in serious consequences. Jenifer Hartnett-Bullen, a principal consultant for PA Consulting Group, says that one of her group's clients gradually moved data center equipment around and upgraded the feeds into the center to cope with the total supply requirements.

"However, they forgot to take account of the way failover worked to route the power, so that when one of the between-floor risers failed, the power was routed over to the remaining risers and caused them to overload, resulting in a catastrophic failure that took days to recover," she says.

In fact, she says that one of the most common problems encountered by data center managers is failure to get power to where it's needed, particularly because power density requirements are far higher than in the past, which in turn increases the need to track how much power is required and where it is required. The rise of cloud computing, virtualization, and consolidation are examples of three changing dynamics that are forcing data center managers to gauge the impact on hardware and the resulting power distribution requirements.

"Power needs to be treated less like a utility and more like a scarce commodity that must be accounted for and managed," advises Alastair McAuley, a managing consultant with PA Consulting. "Constant measuring of usage patterns is essential. It has the additional benefit of making the green agenda easier to pursue, as the information gathered allows intelligent decisions to be made about power usage and reduction initiatives."

Monitor & Label

According to Stark, common electrical issues he encounters are circuit overloading and the failure to provide alternate power circuits from redundant sources. When circuit breakers open in an overcurrent condition, he says that power to IT equipment can be interrupted, but metered power strips (or PDUs) can help to manage circuit loading.

"There are several manufacturers that offer products which can display circuit load information locally on the power strip and/or remote via monitoring software. Alarms can be generated when a circuit exceeds a preset threshold. More advanced PDUs can be managed remotely such that individual receptacles on the PDU can be monitored and even switched on and off by the data center manager," Stark says.

In the case of redundant power circuits, Stark recommends consistent, accurate planning and labeling. Data center personnel should accurately label circuits both at the panel and the receptacle, and Stark suggests using designations such as "A" and "B" sources. Further, he recommends color-coding conduits and receptacles for quick visual recognition of alternate power supplies.

"These systems are often incorporated into new installations but tend to get compromised over the life of a data center as servers and circuits are added and removed. Data center managers must be diligent in change management within the data center. Periodic assessments should be performed by engineering consultants to identify single points of failure or other potential threats to redundancy and fault tolerance," he says.

Manage Your Branch Circuits

Perhaps not surprisingly, 70% of data center outages are related to electrical issues, according to the Uptime Institute's Abnormal Incident Report database, which includes reports of more than 4,400 incidents and about 400 outages. Of those, two-thirds are at the branch circuit level, says Julian Kudritzki, vice president of development and operations for Uptime Institute Professional Services (professional services.uptimeinstitute.com).

"Typically, these outages are not extended," Kudritzki says. "However, a disruption of availability of a mission-critical data center is a significant and costly event to the business. The most effective method of prevention is development of rigorous processes and procedures, with multiple checks, to ensure that branch circuit connections and installations are well-planned to ensure smooth execution."

PA Consulting's Hartnett-Bullen adds that while it's generally difficult to prevent electrical problems, data center managers have the ability to control the way they manage their power demand, configure and maintain their equipment, and plan for power interruptions.

Key Points

- Data center electrical infrastructures often are overlooked, forcing data center managers to don electrical engineer hats when issues arise.
- Pay close attention to failover and routing when making data center changes to avoid problems with getting power to where it's needed.
- Avoid failure to provide alternate power circuits from redundant sources by properly labeling power sources and color-coding conduits and receptacles.

> "Power needs to be treated less like a utility and more like a scarce commodity that must be accounted for and managed."
>
> *- PA Consulting Group's Alastair McAuley*

Get Coordinated

A common electrical issue in data centers is an electrical trip caused by uncoordinated breaker panels, says Dave Sterlace, critical power segment manager for ABB (www.abb.us). Some manufacturers provide "series-rated" panel boards and remote power panels to increase the interrupting capacity (or the ability to disconnect a given magnitude of short-circuit energy) of the system.

"This allows the use of a high-interrupting capacity main circuit breaker and standard interrupting capacity branch circuit breakers, sparing the expense of fully rated branch breakers. While this offers a more economical solution than a fully rated system, it may result in a circumstance where you depend on the main circuit breaker to interrupt a fault. The main circuit breaker clearing the fault also has the unintended consequence of disconnecting 42 or even 84 circuits—servers in most cases. In a data center environment, this downtime is extremely expensive," Sterlace says.

Because a fully rated system can be prohibitively expensive, Sterlace recommends that data centers consider coordinated systems. For example, a system can be coordinated up to 35,000AIC (Amperes Interrupting Capacity) by testing a 65,000AIC current-limiting main circuit breaker with a 10,000AIC current-limiting branch circuit breaker.

PHYSICAL INFRASTRUCTURE

Standby Power

How Much Should Your Enterprise Have?

by William Van Winkle

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People in general may have an innate fear of the dark, but for IT managers, this impulse can reach sheer frenzy in a matter of minutes. Very few enterprises are comfortable with the idea of sitting in the dark with all operations halted for any length of time. And the more a company's operations hinge on 24x7 online access, such as with ecommerce, the more that company is likely to be intolerant of any downtime and will take costly measures to prevent it.

"You're just trying to carry enough backup power of any type—battery, gen sets, whatever—to keep your server room or data center running long enough to perform an orderly shutdown," says Darin Stahl, lead analyst at Info-Tech Research Group. "The duration of that runtime is a function of business needs, criticality, and cost, and cost is a derivative of impact to business. I see a lot of SMEs out there using a standalone or a rack battery solution to keep critical servers up for 30, even 45, minutes."

How Much Standby?

One of the biggest reasons enterprises get in trouble with standby power is failure to honestly and accurately assess this criticality. Many times, the systems that admins think just can't possibly be allowed to go down really can, especially when viewed against the expenses required to prevent downtime. People understand that accidents happen, especially to smaller enterprises that provide superior service instead of having massive infrastructure redundancy. Provided that systems are in place such that the most important servers can be shut down within a few minutes so that no data is lost and/or service can be failed over to a remote location, then an additional standby power investment may not be warranted.

Of course, this still leaves the question of how much standby power an enterprise really does need. Most require at least some, and deciding on the number of standby minutes is only half of the question.

"Typically, clients need to assess the critical loads in their facility that they need covered," says Steve Luedtke, director of marketing for Critical Power Exchange (www.criticalpower.com). "They may not need all of the lights, but the cooling and blade servers or whatever will need to stay on, and they'll need to figure out the kVA and amps for that pull. If they don't already have one onsite, they should get a local electrical engineer in there to walk through [and decide] how everything should go together. You tell him what you think your critical needs are, then he can assess and set up the system as to how it would go."

Key Points

- Enterprises often under-budget total standby power costs and over-budget standby power capacity needs.
- Older standby power models in which enterprises bought one solution meant to last for a decade can result in significant inefficiency and wasted resources. A pay-as-you-go model could make more sense.
- Reanalysis of an organization's standby power implementation should be done at least annually, with the findings being used to tweak capacity to optimal levels.

Coming up with this list may not always be as easy as it seems. How much of the data center infrastructure (routers, switches, storage, and tape systems, among other things) needs to be included? How much backup lighting? Does the cooling need to stay up as long as the servers do? Info-Tech's Stahl also suggests that an audit of data center power lines should be done before arriving at this standby load estimate. Although data centers may start out with all plugs cleanly marked and accounted for, time and entropy often have their way. Systems move. A cord for this one thing was a bit too short, and, in a hurry, well. . . . Things that were intended to be on backup power were moved off, and things that were never considered critical are suddenly part of the standby power budget. The results can contribute to significant over- or under-budgeting on standby power.

Wonky Budgets

According to Critical Power's Luedtke, the average SME standby power solution he sells today is 1,000kVA. He also notes quoting a lot of backup products in the 1 to 1.5kVA range to clients who have under-budgeted their standby needs and can't afford large-name OEM solutions. Why so many under-budgets? Luedtke says it's "the age-old problem where they wrote the bids two years ago, and since then, the prices went up." Especially in the current economy, in a business where lead times can be long and inventories short, some vendors may take the chance to squeeze for higher margins. Engineers need to take into account how far out the bid is and allow for extra expenses . . . and managers need to pad in a certain percent for tough times . . . just in case.

On the other hand, many enterprises radically over-budget their standby power needs. Greg Fournier, director of IT power and distribution solutions, product management, at APC (www.apcc.com), says there are three basic models for buying standby power. First, small enterprises will often purchase single-phase distributed UPSes, meaning a new UPS for each new server that gets added.

"The second, more historical way is enterprises try to look 10 years in the future and buy a three-phase UPS for that time," says Fournier. "They run it inefficiently for the first five years and hopefully grow into the capacity and efficiency they expected. You oversize your UPS based on uncertainty."

The problem with this approach is that, just like power supplies, standby power systems perform less efficiently when operating outside of their peak utilization zones. Fournier notes that a 10-year UPS is likely going to run at 20 to 30% capacity on Day 1, "so at such low utilization, you're losing 20% of the energy to waste heat." Obviously, this magnifies the total power cost because the business not only has to pay for energy into the standby system but also all of that extra waste heat from excess inefficiency.

The third option is a modular approach. This entails buying a similar sort of "big steel" standby power framework used in 10-year solutions, but the battery systems are modular, so enterprises can purchase capacity as they need and grow. If the object is to stay near 80% utilization, an enterprise could start at 70%, grow up to 85% or 90%, then add another module to knock the capacity back down to 70+%.

Time To Re-Evaluate

There is no common rule for how often an enterprise needs to analyze and recalibrate its standby power usage. One advantage of the buy-a-server, buy-a-UPS model is that there's little recalibration ever required. Provided that the server configurations don't change and batteries are monitored regularly (at least once per month), standby power should remain well-fit. Keep in mind that UPS batteries need replacing every 24 to 36 months, on average.

For larger deployments in which standby systems are centralized, an annual site reanalysis is more appropriate. Based on this, forward-looking plans for the next six months to three years should be fine-tuned. Just remember to integrate plans for upcoming equipment changes—both additions as well as consolidations—that could affect total capacity numbers. P

> Many times, the systems that admins think just can't possibly be allowed to go down really can, especially when viewed against the expenses required to prevent downtime.

News

DHS: Cybersecurity Is In Good Shape But Could Be Better

The Department of Homeland Security recently released its "Information Technology Sector Baseline Risk Assessment" report, wrapping up a review process that was initiated in September of last year. The report is intended to assist organizations in the allocation of their security resources, not to recommend specific actions to specific entities.

In broad strokes, the report says that global network security is at present moderately able to withstand a large-scale attack or failure and to mitigate its effects. However, security and network robustness can obviously improve on a number of fronts.

The report's authors recognize that the private and public sectors are interdependent, and vulnerabilities in one area can lead to breaches in others. For instance, government agencies, utilities, and critical infrastructure and key resource sectors use IT equipment manufactured by private concerns. Likewise, some businesses, such as telecommunications providers, must work with intelligence agencies in national security matters, supplying network and record access. Furthermore, networking spans the globe without regard to borders or geographic boundaries.

The report lists several risks of high consequence to critical IT sector functions. One such risk, contamination of IT products, could be reduced by oversight and redundancy of suppliers, raw material quality checking, and product recalls. To keep natural disasters from overwhelming incident management capabilities and "blinding" response coordinators, according to the report, information sharing should be federally organized and robust, and the human resources and containment infrastructure should be heterogeneous.

Potential subversion or disruption of the Domain Name System came to the forefront of security mindshare in the past year, and there's still cause for concern, the report indicates. Redundant and resilient infrastructure, diligent oversight, mitigation provisioning, and Anycast are suggested components of an action plan. Better training, hardware, and software can likewise reduce the risk of widescale disruptions to ecommerce, communications, and other network-dependent services.

The report also calls for further investigation of developing threats as well as expanded exploitation of the security mechanisms and information sharing systems already extant. To those ends, the authors recommend cooperation among all parties involved.

The report calls for better research into the security of original identity documents, as these form the foundation of identity management. Accidents and other unintentional, man-made threats also warranted deeper digging in regard to their risks to the IT sector, it says. Finally, the report suggests that there be a federal testing and simulation capability for changes to the Internet as well as a more year-round approach to educating the public on cybersecurity.

by Marty Sems

SECURITY

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Federal Lockdown

Government Agencies Face Challenges Complying With Federal Mandates On Identity & Access Management

by Elizabeth Millard

• • •

IDENTITY AND ACCESS MANAGEMENT pose problems in all enterprises, but for government agencies, ID management is an even bigger concern because of federal mandates.

Although a major directive has been put in place, most agencies haven't met the deadline for compliance, highlighting the challenges that come with standardization efforts, according to experts and vendors that provide ID tools for government clients.

Homeland Security Presidential Directive 12 (HSPD-12) was issued in August 2004 by President George W. Bush. It calls for a mandatory, government-wide standard for "secure and reliable forms of ID issued by the federal government to its employees and employees of federal contractors for access to federally controlled facilities and networks," notes the U.S. Department of Agriculture's site. The USDA's efforts include an ID called LincPass, designed to link an identity to an ID credential that will grant access to physical and logical systems at the USDA and other agencies.

Although many agencies have sported similar efforts, there's still a long way to go before there's true compliance, and even the Department of Homeland Security got a deadline extension to 2010, notes Chris Poulin, CSO at Q1 Labs (www.q1labs.com). Poulin spent eight years in the U.S. Air Force managing global intelligence networks and developing software. He says, "Almost no one has been able to meet the directive."

Key Points

- The Department of Homeland Security has issued a governmentwide standard for secure forms of ID, but many agencies are struggling to fully comply.
- Challenges to compliance include cost and technical hurdles.
- Although the directive could spark ideas in the private sector about creating standardization on access management, many experts believe it's unlikely that a similar mandate will be handed down from the government to private industry.

Looking Toward Cohesion

The initiative is intended to create an interoperable access control mechanism for all federal agencies, with identity verification that includes extensive background checks and ID cards with smart chips. The idea is to create cohesion and standardization within agencies, so they're all on the same system and can therefore be accessed in the same way. For example, a CIA agent could get into buildings at NASA without going through additional security checks.

There's been a wide gulf, however, between the development of this directive and its implementation, some experts have noted. Laurie Aaron, vice president of government and Alliances for Quantum Secure (www.quantumsecure.com), says that the mandate had a deadline of Oct. 27, 2008, at which time all agencies should have had new ID cards and technology for employees and contractors. But recently, she spoke to one agency that hasn't even started the process and has 40,000 employees to credential.

"Everybody is moving at their own pace, and some have now decided that they're going to develop their own process," she says. "Cost is a big issue, because even though the government mandated this, they didn't fund it, so agencies have had to build it into their budgets, and that's not easy."

There are also technology challenges because of the complexity involved, says David Ting, CTO of Imprivata (www.imprivata.com), a single sign-on provider with government customers such as the City of Miami Beach. He says, "How do you standardize everyone on one type of card? That's a more complex and expensive question than it seems."

Coming To The Private Sector?

When all agencies do comply with HSPD-12, does that mean the same directives might be targeted at the private sector, particularly toward companies handling health records? Although mandates such as HIPAA have been issued in the past, many experts believe that HSPD-12 won't join them.

"It really doesn't translate into the private sector because it's wildly invasive in terms of background checks and cost," says Q1's Poulin. "The presidential directive is almost an idealistic way to look at access control. What they've painted is the need to have some sort of centralized ID system."

Access management is a security issue at any company, but Poulin notes that not many companies would want to gather as much information about their employees as HSPD-12 requires. Also, employees are likely to balk, he notes. In a federal agency, employees expect deeper background checks, but in the private sector, it could be surprising to an employee if the company decided to call all of the employee's friends and former employers to determine character and personal history.

Also, the checks must be maintained, sparking more cost and privacy issues. While at the Department of Defense, for example, Poulin was given a polygraph test every six months and went through random drug tests.

The idea of centralization and standardization, though, could be helpful to companies in general. IT managers may want to team up with HR to look at what type of consistency exists in background checks and how that process might sync with creating different levels of access. Poulin says, "Universal access control doesn't have a lot of meaning, because you wouldn't want an administrative assistant and the CFO to be able to see the same data, for instance. But companies may want to look at the principles outlined in HSPD-12 for ideas."

Biggest Challenge: Trust Issues

Beyond the technical challenges of implementing HSPD-12 comes a broader issue of trust, says Adam Vincent, CTO of Layer 7 Technology (www.layer7tech.com) and an advisor to the Department of Defense and the Department of Homeland Security.

"We need to trust the agency that has issued the users and systems credentials, we need to trust and understand the metadata utilized for authorization, we need to trust the enforcement of authentication and authorization policies and employ common policies for each, and lastly, we need to trust all of the systems and people involved in all these processes from user credentialing and human resources to policy creation and deployment," says Vincent. "Although there are technical efforts underway to assist in these areas, we have a long way to go before government agencies will trust a common credential for doing anything more than just authentication."

News

PC Market Shows Signs Of Recovery

According to market research firm iSuppli, the global PC market is making baby steps toward recovery, achieving its first sequential growth in shipments in six months. Second-quarter shipments were up 1% compared to the first quarter, growing from 66.5 million to 67.2 million units, although the quarter's shipments were down 4.3% when compared to Q2 2008. iSuppli says that although the growth is a good start toward growth in the remaining quarters, it likely won't be enough to generate growth for the fiscal year as a whole; however, the release of Windows 7 later this month is expected to drive sales.

FCC Proposes New Net Neutrality Rules

Federal Communications Commission Chairman Julius Genachowski announced a proposal to add two new principles to its Net Neutrality guidelines. The first proposed principle bars Internet providers from discriminating against or blocking access to certain applications or Internet content and allows for "reasonable" network management practices. The second principle requires access providers to be forthcoming about the ways in which they manage network traffic. Net neutrality is often a hotly contested topic, with consumer advocacy groups and companies such as Google supporting the guidelines and telecommunications providers such as Verizon and AT&T opposing them, claiming that 'Net neutrality limits or stifles innovation.

Report Examines Cybersecurity Priorities

According to a report from the SANS Institute, IT departments are focusing their cybersecurity efforts on the wrong problems, guarding against old problems and opening their networks up to a host of new cyber threats. The report, "The Top Cyber Security Risks," suggests that companies adjust their priorities to look at two main areas: targeted email attacks such as spearfishing, which find and exploit unreported programming errors, and vulnerable Web sites, which are commonly compromised via SQL injection and cross-site scripting flaws. The SANS Institute based its report on attack data from 6,000 organizations gathered by Tipping-Point, vulnerability data on 9 million computers gathered by Qualys, and additional information from the Internet Storm Center and members of SANS.

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TIPS & ADVICE

User-Experience Engineering

User-Friendly Applications Can Improve Employee Productivity & Reduce Training

by Kurt Marko

• • •

Wouldn't it be nice if software were intuitive and worked the way you expected? If it adapted to your workflow, rather than forcing you to learn its idiosyncrasies and adapt to its built-in assumptions of how tasks should be completed?

UXE, or user-experience engineering, seeks to fix these problems, and experts say that improving usability of internal business applications yields substantial cost and efficiency benefits.

Core Elements

Chris Nodder, director at Nielsen Norman Group, says UXE is based on a fundamental insight—developers don't think and act like their users, and they often make assumptions about software features and operation based on what makes sense to them or how they would go about a task. UXE brings the users' perspectives to the development team.

Nodder says the easiest place to start is with simple observation: "Just bring a pen, paper, and roll of duct tape. It's obvious what the pen and paper are for, and the duct tape goes across your mouth." In other words, when assessing user needs and work habits, it's important not to influence a user's behavior by interjecting extraneous comments or advice.

Info-Tech Research analyst Howard Kiewe agrees, adding that UXE is a highly iterative process, with data collection driving design prototypes, which are usability tested with the results fed back into subsequent design iterations. Software prototypes are ideally low-cost mock-ups, which Nodder notes may be nothing more than sketches, PowerPoint slides, or Flash animations that designers can quickly modify before committing to code.

Key Points

- Software UXE (user-experience engineering) is a formal, structured design methodology with the goal of improving the usability, effectiveness, and efficiency of an application or Web site.
- UXE isn't just for commercial, shrink-wrapped applications; it can yield major benefits for internal, employee-facing sites. These include increased employee productivity, reduced application support and training costs, and lower software development and maintenance expenses.
- Budget-strapped departments shouldn't forego UXE, but rather scale back other elements of the application and identify and train existing staff who are enthusiastic about usability to act as UXE champions.

Kiewe proposes a five-phase UXE lifecycle (see the graphic, "The UXE Lifecycle") that starts with defining business objectives (such as reduced training costs), moves to user research (understanding how users accomplish a task), which then drives user experience requirements (the convergence between user needs and business objectives). These lead to prototype designs that are subsequently evaluated through testing.

Deborah Mayhew, a usability engineering consultant who outlines a structured design methodology in her book "The Usability Engineering Lifecycle," says UXE is one piece of an overall software development methodology. Mayhew breaks requirements analysis into several steps, including: user profiling (researching user characteristics and needs), task analysis (researching user tasks and workflow and their mental models of the work), and usability goal setting (establishing quantitative, measurable goals from the requirements that are subsequently used in acceptance and usability testing).

Benefits Of UXE

UXE's essential value, according to Nodder, is that it enlightens and prods developers to build software users actually want by identifying what's wrong with current systems and some possible changes. For internal systems, Kiewe notes that UXE leads to reduced costs in several areas, including increased employee efficiency and productivity, reduced training and support, and less software development and maintenance effort by not wasting time on features users don't need or want or won't use.

UXE's contribution to external, customer-facing applications is even more profound. In addition to cost savings, improved usability can create more customer traffic and increase sales.

According to Nodder, UXE's iterative design and prototyping process can dramatically reduce development costs by catching problems earlier in the product cycle, where each phase can add an order of magnitude to the cost of changes.

> UXE's essential value is that it enlightens and prods developers to build software users actually want by identifying what's wrong with current systems and some possible changes.

UXE Costs & ROI

Experts agree that about 10% of a software development budget should be spent on usability, although Kiewe says this can double for customer-support or revenue-generating applications.

Kiewe says the ROI potential is often 200%, although Mayhew has seen many examples much higher. She cites an example where she worked on a project to improve the user experience of a customer support application for a large financial services company. "By ensuring . . . that a new user experience design would decrease the time to process mail and phone support by about 10%, the new application was expected to save about $1.5 million the first year and $7.5 million over the first five years. The cost of the user experience engineering was under $250,000. Clearly this investment resulted in a dramatic ROI."

According to Mayhew, there are several key steps in the ROI calculation to make the business case for UXE. She recommends starting with a usability engineering project plan and then establishing cost-justification analysis parameters, such as increased sales or decreased support costs. Next, calculate the costs of UXE in the development project, identify and predict the relevant benefits, and construct a cost-benefit analysis. Itemizing the costs of UXE is usually easy, but Mayhew advises minimizing skepticism by being conservative when estimating benefits, because she finds even modest usability improvements result in dramatic paybacks. As a starting point and template, she offers a detailed spreadsheet on her Web site at www.drdeb.vineyard.net/djmacostjustificationtool.xls.

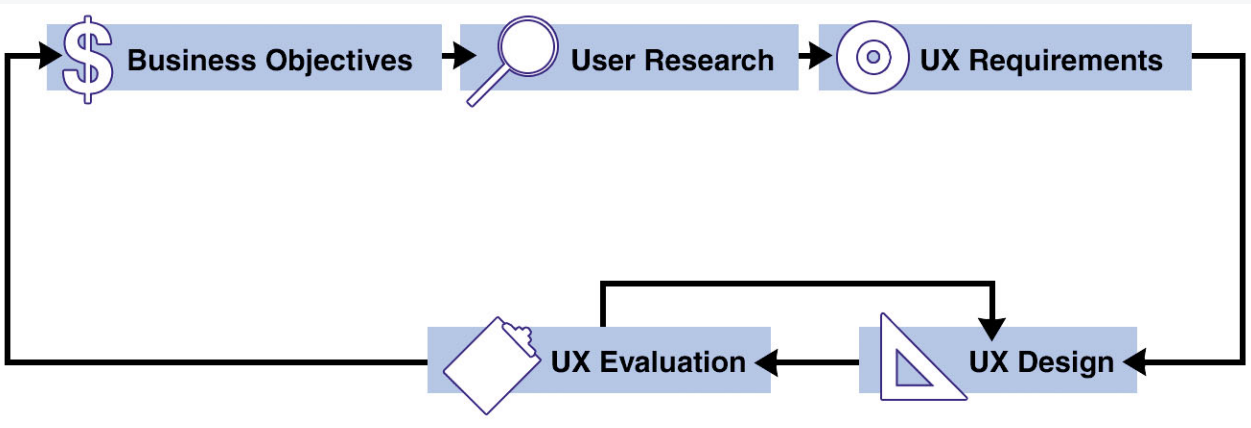
Passionate About Usability

Depending on a project's scale and scope, incorporating UXE may be as simple as finding someone on staff that is passionate about usability and willing to apply standard heuristics. Kiewe agrees that training an interested staffer, particularly someone such as a business analyst who is experienced in identifying user and application requirements, is a good starting point. "It's not like you need a Ph.D. in clinical psychology to do it," he says.

Larger projects will likely require professional help. "User experience is becoming a more and more specialized area of expertise," says Mayhew. "IT departments need to invest in multidisciplinary teams and then provide a work environment that fosters mutual respect, collaboration, and highly effective teamwork among them. Training can be one very effective way to support this agenda." P

The UXE Lifecycle

The UXE lifecycle includes the following five iterative phases:



1. Business objectives for the UXE effort are defined; for example, to reduce software training costs by 50% or increase Web conversion rates from 2% to 4%.
2. User research is completed by watching users work and noticing pain points, time-wasters, and unmet needs. Users are also interviewed to more fully understand the thought processes and motivations that led them to interact with the application in a particular way.
3. UX requirements are defined by identifying areas where business objectives and the user needs identified in the research phase overlap.
4. UX design is completed by developing a series of increasingly detailed models or prototypes, iteratively evaluating and redesigning each type before moving to the next.
5. UX evaluation is best accomplished through testing of the models and prototypes with users as they perform simulated tasks. These tests generate new design ideas and determine when user requirements have been met.

Source: "User Experience Engineering: Cost Effective User Satisfaction"; Info-Tech Research Report by Howard Kiewe; November 3, 2008.

News

Enterprises Increase IT Energy Efficiency In 2009

Technology product supplier CDW surveyed 752 IT professionals to formulate its 2009 Energy Efficient IT Report: The Power of Prioritization on enterprise energy savings. According to the results, CDW found that in 2009, 59% of companies are actively training workers to power down equipment if they're away from their office equipment.

The report recounts the ebb and flow of the wise use of energy in 2009 while addressing the impact of the recession, goal-delaying challenges, ways to save energy, and previous successes. Undoubtedly, cost reduction has motivated changes throughout the enterprise workplace.

Randall Foltyniewicz, manager of Enterprise Power & Cooling Practice for CDW, says that the result of the IT energy management resurgence is the increased array of solutions and the quality of information available to support action.

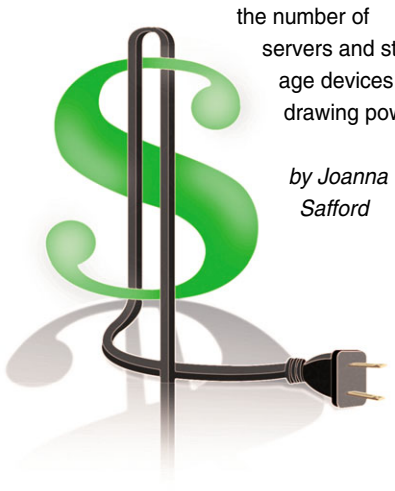
"Most companies are simply realizing now what significant cost savings energy-efficient IT can provide," says Foltyniewicz. "In fact, respondents to CDW's 2009 Energy Efficient IT survey believe that they can reduce their annual IT energy bill by an estimated 17% by implementing all available energy-saving measures."

Unexpected Results

CDW was anticipating that energy efficiency programs would be suffering or lagging due to the recession-related budget pressures. However, Foltyniewicz says, "There was still a significant advancement in 2009, as 52% of organizations with defined energy management programs said they had seen a reduction in their IT energy bill, compared to 39% in 2008."

IT decision makers seem to be the movers and shakers in the continued development of efficient energy management, as indicated by the survey. "IT's ownership of the energy bill remains a decisive factor in a business' IT energy efficiency," says Foltyniewicz. "Without a doubt, IT executives who are responsible for the IT energy bill take a longer-term view. Those with responsibility for the energy bill are twice as likely to place high importance on energy efficiency in the purchasing process when compared to executives who do not own the IT energy bill."

Taking responsibilities for IT energy consumption requires employing measures that are already built into server and desktop operating systems, Foltyniewicz says. Specifically, he says that data center managers should consider the following steps: monitoring data centers remotely to keep lights off when employees are not onsite, managing cable placement to reduce demand on cooling systems, and implementing server and storage virtualization to reduce the number of servers and storage devices drawing power.



by Joanna Safford

TIPS & ADVICE

Build A Data Center On A Budget

Be Sure The Budget Doesn't Override Functionality

by Bridget Mintz Testa

• • •

If your enterprise needs to build a new data center in this economy, that's probably good news. But because many companies are conserving funds, your construction budget may be less than ideal. You can save money on construction, although trade-offs are inevitable. Don't let the budget override functionality, though, or the final product won't satisfy anyone.

"Before you get to a budget, decide on your business case and what the data center needs to do for you," says Vince Renaud, a principal consultant for Uptime Institute Professional Services (professionalservices.uptimeinstitute.com). "If the budget or schedule are decided first—if these are the drivers—you'll be disappointed."

Business Reasons Dictate Design

Know the business reasons for the data center. That will dictate design decisions and, ultimately, the budget. "We have three criteria that must be established at the onset of any design effort: the total load, desired availability, and the density at which equipment must be deployed," says Peter Sacco, president of PTS Data Center Solutions (www.ptsdcs.com).

> "Before you get to a budget, decide on your business case and what the data center needs to do for you. If the budget or schedule are decided first—if these are the drivers—you'll be disappointed."
>
> *- Uptime Institute Professional Services' Vince Renaud*

While weighing these criteria, it's possible to make strategic choices that will save money. One strategy is to reduce the total cost of ownership of the data center instead of the up-front building costs. Buying more efficient electrical equipment can do that. "More efficient operating equipment is more expensive, but the return on investment is two to five years," says Jason Schafer, senior data center analyst with Tier 1 Research (www.t1r.com). "Smaller companies may get the return on investment in two years."

To achieve these long-term savings, Schafer recommends purchasing a UPS that is 98% or 99% efficient at low loads vs. one that is only 96% efficient. "That 2% difference is significant with data center loads," he says.

If the "spend more now to save money later" strategy doesn't appeal to the finance people, another radical-sounding strategy can save money up front. "Organizations build for lots of extra resilience. They over-engineer for what they need," says Rakesh Kumar, vice president of data center research at Gartner. "Instead, go to the opposite end and minimize the level of resilience you can live with." Kumar says dropping down a tier level can halve build-out costs. "Be honest and realistic. Go to the lowest level you can live with."

Talk Budget

Once these major decisions are made, then it's time to talk budget and look for other ways to save money. There are plenty of them.

Using outside air for cooling is one method. "There is a lot of money to be saved on the cooling side by doing this," says Schafer, "even if outside air is just brought in for recirculation and even in hot climates where the outside temperature is 90 degrees." Air discharged from servers is hotter than 90 degrees, so pushing that air outside saves cooling expenses. Of course, if you bring in hot, humid air for circulation, it will require dehumidification, so that cost must be figured in with this approach.

Using various modular elements such as containers, prefabricated building shells, and prepackaged cooling systems can also save money. With such elements, "build time is cut, so labor costs and engineering costs are, too," Schafer says. He stresses two things: one, you must be careful to make sure the modular route really cuts costs, and two, that it's not possible now to build an entire data center this way.

To reduce initial capital costs, Sacco's customers aren't installing dry-type fire suppression and very early smoke detection systems nearly as often as in the past. "Additionally, some of the physical envelope requirements, including vapor barriers, fire-rated walls, physical access security, camera surveillance, and moisture-resistant ceiling panels, are areas that can be cut without substantial impact to site availability," he says.

You can reduce initial costs with a few tricks, according to Kumar. "There's no need to raise floors in most cases, especially for a small data center," he says. "You can put cabling above the floor and chillers against the wall. Virtualize as much as possible, so there aren't as many servers, so less cooling is needed."

In addition to virtualization, just install new servers in the new data center and "let old equipment die," Renaud suggests.

"Install less capacity," says Julian Kudritzki, vice president of development and operations at Uptime Institute Professional Services. You can temporarily outsource what you don't build in the beginning and expand the data center to full capacity later.

Get New Capital

Both Kudritzki and Renaud stress that if you don't initially build to full capacity, you must have a plan for when to get the new capital and finish the data center. "Don't wait until it's an emergency," Renaud says. "That will only make it more expensive and inefficient."

Spending money now or later is a trade-off you'll face if you take Schafer's advice and spend more up front to save on long-term operational costs. You'll also face it when you don't initially build all the capacity you need. "You'll have to go back in with another construction phase," Kudritzki says. This can make building costs easier to swallow, but it means more dollars later.

More downtime is the biggest trade-off of all of these cost-saving approaches. It can happen down at the server level, or it can affect the entire data center if there's a power outage. "The trade-off is a little bit extra risk, especially around availability, but you are saving money," Kumar says. "The questions to look at are how much downtime you've had in the last five or 10 years and what were the effects."

No matter what choices you make, don't let cost affect the functionality of the data center. "If cost becomes the driver, then the data center will not meet the business requirements," Kudritzki says. P

Key Points

- Before anything else, decide on the business case for the data center. That will dictate design decisions and, ultimately, the budget.
- Be realistic about what you can live without. Can you live with a less resilient data center?
- Downtime will be the biggest trade-off when cutting initial building costs.

What You Can't Cut When Building A Data Center

When building a data center on a budget, some sacrifices just can't be made. Don't compromise on any of these:

- The control system and its distribution points
- Disaster-recovery capability, especially if you've built to the minimum resiliency level
- Energy monitoring and energy management software

SECURITY

Monitoring IT Logs

Find Help When Learning What To Look For & Spotting Problems

by Bridget Mintz Testa

• • •

YOU MIGHT THINK your enterprise is too small or doesn't make enough money to be targeted. It doesn't matter. Your enterprise will be attacked. In fact, you're almost certainly being attacked right now, even as you're reading this article. Is your enterprise equipped to find and fix that?

"Attacks on small organizations and their sophistication are almost identical to large businesses because the attacks are unfocused and automated," says Alan Paller, director of research at The SANS Institute, an organization specializing in security training and research (www.sans.org). "A small business has the same problems as a Lockheed or a Citibank."

A big strike against small enterprises is their lack of resources. "Small companies don't have the talent or resources to fight these attacks," Paller says.

Still, smaller enterprises can't just sit back and do nothing. Experts stress that, above all, smaller enterprises get help, whether it's contracting with an ISP to filter out assaults, buying and using log management tools, or outsourcing security management. Once an enterprise gets help, then it can start figuring out what to look for. "It's a learn-as-you-go type situation," says Mark Nicolett, an IT security analyst with Gartner. "You have to learn what the settings should be."

Strategic Log Use

Log management tools help with more than security. They can also support company strategy. Tracking server access, network traffic, email volume, and other metrics "tells you what you need to spend for more bandwidth and equipment," says Jon Oltsik, principal information security analyst for Enterprise Strategy Group.

Centralized logs, in particular, can also show metrics on overall IT system use, helping with performance optimization. Thus centralized logs become "a productivity enhancement tool," says Paul Davis, a faculty member at the Institute for Applied Network Security and the executive vice president/COO of IT security operations firm Decurity (www.decurity.com).

Get Help

One way to get help is to contract with an ISP to filter out attacks before they hit your organization. Paller says this is about 60% effective, assuming an ISP is willing. Unfortunately, "ISPs don't want to take that responsibility," Paller says.

Paller has been working since 1997 to get ISPs and software vendors to automate security measures, and, although he's had success with software vendors such as Microsoft, ISPs remain recalcitrant. Still, it's worth a try. As for the 60% effectiveness, Paller points out that if attacks look similar to messages your customers send you, an ISP can't tell. But 60% effectiveness is better than no protection at all.

If you aren't already using log management tools, get something, although even with a tool, the flood of data is overwhelming. "If you have 200 devices, that's a couple of thousand log events per second," says Jon Oltsik, principal information security analyst at Enterprise Strategy Group. "Most of that data is meaningless, and you need help to know what's meaningless and what isn't."

Log management tools collect, analyze, and generate reports about data. What they don't do is fix the problems the data reveal. "You must fix the problems, because they won't go away," says Paul Davis, a faculty member at the Institute for Applied Network Security and the executive vice president/COO of IT security operations firm Decurity (www.decurity.com). "You must have a happy, cheerful attitude toward fixing the problems. You must realize that log management isn't a project, it's a program."

Open-source tools are one approach to log management. In addition, some software vendors target smaller enterprises. Depending on your deployment, you'll likely spend between $10,000 and $40,000 (or more if you have special requirements) for low-end log management software.

A third approach is outsourcing. "We're seeing more and more of that in the SME space, because they don't have the resources and people," Oltsik says. "There is an historical bias against outsourcing security, but there aren't enough skilled people around to hire, the number of threats is increasing, and security is getting more complex."

Telecom and information security companies offer these managed services, where a company streams its log data to the managed service provider, which analyzes the data and then produces reports. "Or they can monitor your environment in real time," says Gartner's Nicolett. "You pay for it as a service. This is a good idea for small companies who don't have the resources for security management."

What To Look For

The business you're in determines the logs you keep. "If you sell online, you'll need to keep logs for your applications service, database, and Web site," Oltsik says. Regulations such as HIPAA and Sarbanes-Oxley also dictate log data requirements.

Key Points

- Small enterprises have the same security risks as large companies.
- Get help, whether it's from your ISP, through log management tools, or by outsourcing IT security.
- To detect attacks, look for strange log events.

For security, though, Oltsik says, "Look for any type of exception or abnormality." Here's a sample of what to look for:

- Multiple logins
- An unusual activity, such as downloading employee or customer databases to a home computer
- A spike in Web server traffic, along with a leap in optimization
- Failed authorizations
- Denied outbound connections on the firewall (means someone's trying to access a forbidden site from inside the business)
- Unplanned, unauthorized system configuration activity

"It breaks down into strange user activity, strange configuration activity, strange network activity, and strange applications activity," Davis says. "'Strange' is a big, fuzzy word. Your ability to detect these events is based on your ability to collect that data, filter it, and generate reports consistently." Davis recommends daily log checks for such activity, "so you should have your [log management] toolset at hand to get the data and search it for these events," he says.

Davis also advises centralizing logs to leverage data from all over the enterprise. So if you have data that someone deleted an application, sent emails, or tried to access a forbidden site, "you can see their activity trail through your infrastructure," he says.

The bad guys are out there. "What matters is your level of preparation," Oltsik says. P

> "It breaks down into strange user activity, strange configuration activity, strange network activity, and strange applications activity."
>
> *-Institute for Applied Network Security's Paul Davis*

News

AT&T Says Google Voice Violates Telecom Rules

AT&T told the Federal Communications Commission that Google's VoIP service, Google Voice, violates telecommunications laws because it blocks phone calls to some rural areas. AT&T says Google Voice blocks calls to certain geographic regions that charge higher access fees, a cost-saving measure that traditional carriers are prohibited from using. AT&T asked the FCC to halt the practice and force Google to adhere to the same regulations as its competitors. Google admitted to the call-blocking, but it argued that Google Voice is an Internet application that is not subject to rules applying to telephone companies.

Xerox To Buy ACS

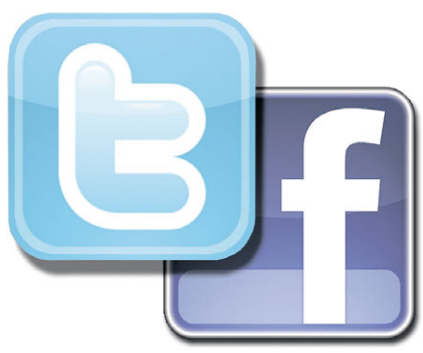
In an attempt to expand its service offerings, Xerox announced that it will buy Affiliated Computer Services for $6.4 billion. Xerox specializes in document management technologies and photocopier products. ACS is considered one of the largest managed service providers for the U.S. government. ACS will operate independently of Xerox and will be headed by its current CEO Lynn Blodgett.

New Secure Network Not Quite Done

According to the National Nuclear Security Administration inspector general, the new Enterprise Secure Network it began building in 2000 still isn't complete, even though it's three years overdue and has cost $180 million. The Enterprise Secure Network was designed to replace the archaic SecureNet. Although the Enterprise Secure Network can operate, about 150 applications that process classified data aren't operational on the network, and the Nuclear Security Administration's supercomputers and classified systems cannot yet link through the network.

Businesses Eye Employee Social Networking

Organizations always take a while to adjust to new communication methods. Adoption of social networking is one example, according to a new survey from the Health Care Compliance Association and the Society of Corporate Compliance and Ethics. Its survey found that 10% of respondents say their organizations have specific social networking policies. Another 34% report that all online activities of employees are covered in a more general policy. About 33% of organizations monitor workers' Facebook, Twitter, and similar site usage either formally or informally, and another 32% discipline their employees when word about potential infractions on social networks comes to their attention.



Facebook, Twitter Users Are More Affluent

According to a new study by Nielsen, Facebook and Twitter users are more prosperous than MySpace users. Users of blog and Twitter, the study says, are more likely to live in urban areas. Nielsen, which studied the top seven social networking sites, reports that about half of Americans went to a social networking site last year.

OPINIONS

FROST AND SULLIVAN

How To Stop Worrying & Learn To Love The Cloud

AUTHOR: *Lynda Stadtmueller is a senior research analyst in Frost & Sullivan's Stratecast division. Her research focus spans emerging trends, new technologies, and market behaviors in the constantly evolving communications industry. Stadtmueller has more than 20 years of telecom industry experience. Her professional career includes leadership positions in marketing, award-winning brand and channel development, and sales for AT&T and its global ventures.*

Send your comments to frostandsullivan@processor.com

Several well-publicized disruptions of Google Apps, including a recent 1.5-hour Gmail outage, have stirred up anxieties over cloud computing. Data center managers who are attracted to the low cost and flexibility of cloud options are once again wary of giving up control in an outsourced solution.

For many data center managers, outsourcing IT functions is a lot like the angst-ridden decision to send the kids to day care. They are convinced that no third-party provider can offer the same level of care and protection. And yet, for the good of the enterprise, the cloud option must be considered.

How, then, do you quell the worries and make a rational assessment of whether or how the cloud fits into your business plan? A few guidelines to keep in mind as you begin the evaluation process:

- The cloud is not a "go/no go" decision. No enterprise of any size should make a cold-turkey decision to turn over all IT functions to a cloud provider. Instead, consider your options on an application-by-application basis.
- The enterprise cloud is different from the consumer cloud, and it carries a greater cost. "Free" (ad-supported) consumer-targeted applications will not provide the levels of performance, reliability, or security appropriate to conduct business. Expect to pay for the quality assurances you need.
- Align your expectations with your needs. If your RFP specifies levels of support and protection that far exceed your private data center, then you may want to recalibrate—or expect to pay handsomely.
- Most importantly, the "public" cloud is not the only option. Providers offer a spectrum of hosted offers that meet a range of needs for control, flexibility, security, and cost.

Explore Hosted Data Center Options

Third-party hosted options include:

Dedicated hosting. Long predating cloud computing, dedicated hosting serves as an extension of the private data center (albeit located in a third-party facility), with each dedicated server custom-configured to the user's application. Customers generally sign term contracts, limiting ability to scale down. Providers may also offer managed hosting, including full end-to-end application performance management, a high-end option that comes with a high price tag.

Private cloud computing. This option takes the benefits of cloud computing—scalability, pay-for-use pricing, and flexibility—and places them in a dedicated server environment. No customer's virtual machines share server resources with any other customer, thus limiting potential issues concerning security (data contamination) and performance (contention for shared server resources). Customers build and upload their virtual applications remotely using simple interface tools.

Public cloud. Companies generally interface with the public cloud in two ways: either by subscribing to software applications (e.g., Salesforce.com, Google Apps) or by utilizing an infrastructure-as-a-service option (e.g., Amazon EC2, GoGrid CloudCenter). Cloud software applications offload the burden of upgrades and patching, while offering a low per-user license fee. Infrastructure as a service offers flexible "rental" of shared computing resources. The public cloud offers the least control of all the data center options, as customers cannot designate where their applications reside or what other applications are sharing the resource. It also offers the lowest price points.

Choose The Right Option

Determine which option is best for each application, based on requirements for control, security, flexibility, and cost. The choice is highly subjective.

Many companies decide that the more important the application is to the heart of the business, the greater the need for IT control, and the less exposure to shared resources. Thus, core applications, or those that generate and manage the core revenue stream of the business, are most likely to remain in a dedicated on-premises data center, where the IT department has full visibility and control.

Other applications may be appropriate for third-party hosting. For example:

- **Dedicated hosting.** Often selected for standalone critical applications or those with limited dependencies, some with critical data storage (e.g., CRM, ERP applications).
- **Cloud infrastructure as a service.** Commonly used for applications with short life spans or bursty or unpredictable traffic levels (e.g., testing and development, marketing campaigns)
- **Cloud applications.** Most common are critical but noncore business productivity and collaboration applications (e.g., email, document sharing, intranet/extranet, conferencing, Web 2.0).

Regardless of the option chosen, a company should, of course, do due diligence to select a reputable provider that has a track record of providing quality service. Understand not only how to build your application in the provider's center, but also what it will take to tear it down or move it to another provider. And be sure to investigate any guarantees and SLAs: what they are, how to claim them, and what the recompense is.

And what about that fear-inducing Gmail outage? Google proactively provided its subscribers a generous three-day credit for a 1.5-hour outage. All things considered, that's not so scary after all. P

OPINIONS

INFO-TECH • INSIGHT

Is The ITIL Empire Overextended?

AUTHOR: *Refael Keren is a Research Analyst with Info-Tech Research Group. He has a strong background in intellectual property copyright management, licensing, and revenue tracking and specializes in areas of corporate governance. Currently, Keren's research resides in IT service management and vendor management. He is a regular contributor to Info-Tech research products on these IT governance topics.*

Send your comments to infotech@processor.com

History teaches us that a great empire's overreaching growth is often responsible for its demise. Powerful armies, unable to defend distant borders, collapse, much like corporations with too many product lines face bankruptcy. Those who have witnessed the version-to-version growth of ITIL (Information Technology Infrastructure Library) might wonder whether there is such a thing as too many best practices. Will a continual scope creep of IT process standardization lead to the demise of ITIL?

Covering More Ground

Keeping best practices fresh for new releases when the current best practice is already optimized can be challenging. So how do you add value to new releases? Well, if you're ITIL, you simply start covering more space. To be fair, ITIL is, by all accounts, more of a reference than a framework; hence the "L" for "Library." The risk, I fear, is that the ever-growing nature of ITIL will lead to its demise—specifically, by making the term "ITIL" synonymous with too many IT processes.

The alphabet soup of British organizations responsible for bringing us ITIL used to speak to infrastructure folks about building service desks and further evolved to cover application change and release. These days, ITIL v3 is also focused on IT's long-term strategy and financial management of services. Not only are these topics new to v3, but they are typically geared at a different audience—CIOs instead of process managers.

I'm not saying that too much coverage in ITIL is a bad thing. The more best practice guidance you can give around IT service management, the better. The risk to ITIL is the dilution of its brand name. Where at one time ITIL implementation was typically targeted at one or two particular processes, today's ITIL covers all aspects of IT.

What Is It, Anyway?

ITIL's greatest contribution to the industry has been the setting and defining of key industry terms that allow IT professionals to speak the same language around some pretty heavy topics. But it strikes me as ironic that when I mention the word "ITIL" itself, I get a very wide set of responses from clients about what it is they believe I'm referring to.

To one client, ITIL represents a bunch of documentation they've been required to do for fear of compliance audits. Some in IT view ITIL as the holy grail of IT projects that will make their lives easier, if only the business would approve the training, hiring, and technical requirements to fulfill their quest. On the flip side, others view ITIL as a threat—there is fear that ITIL represents changes that are client-centric without any benefit to the IT department. And ITIL v3 didn't help ease any confusion by adding business/IT alignment to the focus. One can imagine that defining the statement "implementing ITIL" is not getting any easier.

Perhaps it's time for a rebranding of ITIL. The portions of ITIL v3 that introduce more business-savvy topics, such as IT business alignment and the service portfolio strategy, could be put into a brand new library with a catchy term, such as the ITSSL (IT Service Strategy Library) or ITSGL (IT Service Governance Library). Now when we throw around the term ITSSL, it will be clear that it's in reference to service strategy topics that reside close to the business. When we say ITIL, it will be clear that it's in reference to building the service desk, change management processes, and the other best practices synonymous with ITIL.

Looking Ahead

The good news is that ITIL may have actually reached some sort of final destination. Future ITIL plans do not include a version four, opting instead for other add-ons to keep the empire growing—for example, a bona fide ITIL certification of vendors catering to the IT service management space. We should also expect more of a deep dive into the "how" of implementing ITIL v3 and more mapping to other frameworks similar to ITIL-COBIT mapping.

In the meantime, when you hear someone talking about plans for implementing ITIL, be sure to clarify exactly what they're referring to. Until we collectively start adopting better ITSM catchphrases, the answer may come as a surprise. P

TechExecs Senior IT Executives Network

Think Strategically To Find Your Success

Dr. Kambiz Khadem is the vice chair of TechExecs Network's Atlanta Chapter of CIO Panel Forums and is the founding partner of Strategic Sphere, an executive management solution advisory firm.

Dr. Kambiz Khadem is the vice chair of TechExecs Network's Atlanta Chapter of CIO Panel Forums and is the founding partner of Strategic Sphere.

Huang: Can you give us a better understanding of your background?

Khadem: My bachelor's degree is in computer science, and I have a master's degree in Global Technology Management and a doctorate in Strategic Management. I am currently continuing my post-doctoral education at Harvard University. For more than 16 years, I have been performing enterprise strategic management, alignment, and enterprise portfolio and program management for several billion-dollar corporations.

Huang: What do you think is the main issue regarding managing the enterprise strategy in any organization?

Khadem: Many enterprises have excellent strategies to attain realistic and worthy objectives, yet few consistently translate strategy into the results that shareholders expect. In the global marketplace, enterprises fall behind in their execution of strategy—some from "paralysis by analysis" but, more typically, from details, internal resistance, customer demands, competitors, shareholders, and economic and other variables.

Huang: What is the main organization challenge?

Khadem: It's the complexity of the operational environment and ever-changing strategic landscape that prevents management from understanding, comprehending, and measuring the current state and strategic direction of the organization based on traditional models and tools.

Until recently, there were no viable enterprise-grade solutions and platforms that could be incorporated in an organization's day-to-day operation. The main reason behind development of the SMCF (Strategic Management Continuum Framework®) execution methodology, software platform, tools, and workshops was to address such gaps. SMCF enables management to implement a strategy or plan with top-down direction supported by proactive decision-making capabilities, performance measurements, and accountability for bottom-up execution of actions to achieve objectives.

Huang: How can the issue of the strategic execution be addressed systematically?

Khadem: The first step toward solving this problem is to establish a common understanding of an organization's readiness for adapting or implementing any strategic-related initiative and, more importantly, execution, or knowing that a simple-to-understand maturity model has been devised. This model aids in defining and understanding an organization's ability to visualize, assess, devise, implement, and execute strategies and measure how the organization can perform strategically through systematic measurements that lead to creation of baseline.

The next step is to understand and acknowledge that all the organizational strategies are inherently related and interdependent. Collectively, they support the organizational objectives and determine the direction of the enterprise. The model is a disciplined, systematic approach that provides unique identifiable performance indicators providing near-real-time feedback and status on those elements critical for success.

Huang: Tell us a little about the philosophy behind Strategic Management Continuum Framework.

Khadem: Based on my research and practical observations, I realized what has been validated by many management gurus: That most enterprise's have trouble achieving their objectives because of their inability to execute. From this, I came up with a solution framework that addresses the needs of strategic creation and execution.

Huang: Tell us about the SPE (Strategic Performance Equilibrium®) concept.

Khadem: The SPE factors are those organizational objectives that singularly articulate a specific area of operation or functional area and collectively support the organization's strategic objective.

In conjunction with organizational vision, mission, and values, the SPE factors must influence every strategy in the organization. And every strategy must directly or indirectly support one or more SPEs.

Huang: How do you define an effective Strategy Execution in an enterprise?

Khadem: Execution in an enterprise environment or any large organizational setting is a systematic discipline, implementing a deliberate course and a series of actions that actualize the organizational strategies and value propositions into reality and achieve the underlying organizational objectives. P

To reach Khadem, contact administrator@techexecs.net.

Upcoming TechExecs CIO Panel Forums

The TechExecs Network (www.TechExecs.net) focuses on promoting regional technology community, featuring best-of-breed resources available to key decision makers, networking and partnership among technology and industry executives both online and in-person, and connecting industry buyers and suppliers. TechExecs has a number of learning and networking forums this fall. All readers of *Processor* can attend for free.

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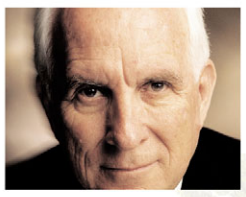

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Processor Solutions Directory

Here are brief snapshots of several companies offering products designed for the data center and IT industry. Listings are sorted by category, making it easy for you to find and compare companies offering the products and services you need.

You can find more detailed information on these companies and the products they offer inside this issue.

To list your company and products, call (800) 247-4880.

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Founded in 1970 as the Digital Products Group of EMS Technologies, LXE provides reliable, easy-to-use, and intelligently designed wireless computers that let enterprises extend their corporate networks to employees working in physically demanding environments. LXE is a six-time winner of the Mobile Star Award for mobile computer customer satisfaction. Its products are used in ports, paper mills, refrigerated warehouses, and indoor and outdoor factory floors.

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IGS is an independent manufacturer and source of supply, service, and depot repair of obsolete Digital Equipment Corp. parts, products, and systems. We maintain an extensive inventory of DEC parts and equipment; some date from the 1960s. We refurbish and service these parts, adding current technology when applicable. We provide Advance Replacement Service within 24 hours if we have the item in stock and, with 75,000 stock items, chances are we will.

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At Information Technology Trading, our goal is to help you acquire the right hardware or software solution. We specialize in purchasing and reselling data-processing equipment and have more than 21 years combined experience. We provide services and system upgrades, DASD, communication, and memory. We're also an outlet for off-lease portfolios.

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